

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: P209016

Luminaire Tested: **LDSQA6A55927D010TE LARH20SP 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209016
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: LDSQA6A55927D010TE LARH20SP 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 20° SPOT, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3498.8 lumens
Efficiency: N/A
Efficacy: 57.5 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

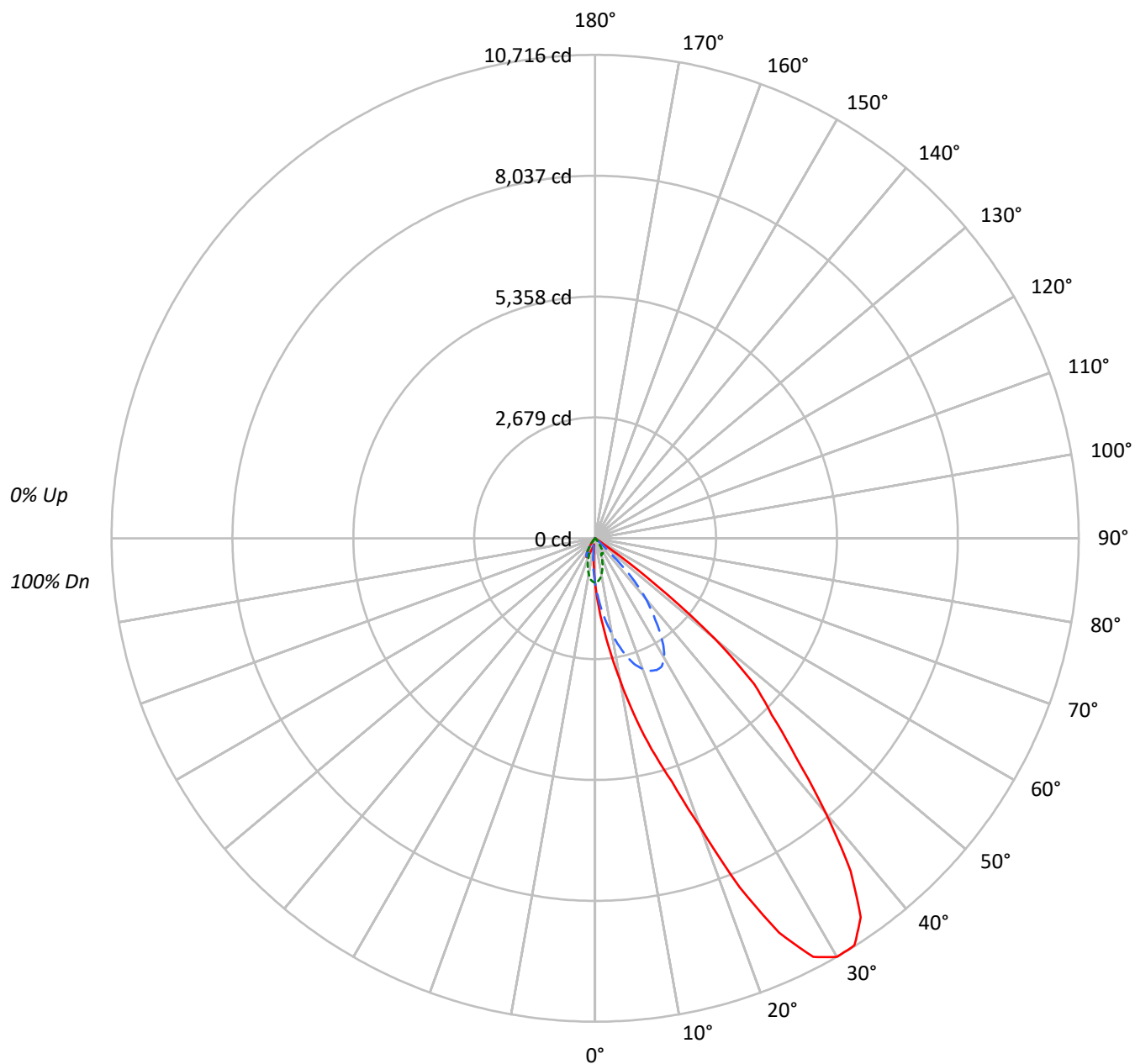
Input Watts (W): 60.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P209016

CATALOG NUMBER: LDSQA6A55927D010TE LARH20SP 6LSQA1H 30°

Luminous Intensity Polar Plot





TEST NUMBER: P209016

CATALOG NUMBER: LDSQA6A55927D010TE LARH20SP 6LSQA1H 30°

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
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	45	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°	42526	42526	42526
5°	82403	40528	13671
10°	140000	35466	6138
15°	215732	28287	9757
20°	312297	18410	16976
25°	458197	17767	21825
30°	532761	16829	16725
35°	539247	8914	8841
40°	446460	3361	3710
45°	337190	1145	1352
50°	230695	422	422
55°	32090	368	53
60°	835	362	0
65°	214	499	0
70°	88	617	0
75°	0	815	0
80°	0	1389	174
85°	0	2766	0



TEST NUMBER: P209016

CATALOG NUMBER: LDSQA6A55927D010TE LARH20SP 6LSQA1H 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.6	3.0
10°-20°	438.0	12.5
20°-30°	999.2	28.6
30°-40°	1156.3	33.0
40°-50°	697.3	19.9
50°-60°	94.8	2.7
60°-70°	3.1	0.1
70°-80°	3.3	0.1
80°-90°	3.1	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°	1540.8	44.0
0°-40°	2697.1	77.1
0°-60°	3489.2	99.7
0°-90°	3498.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3498.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	988	988	988	988	988	
5°	1907	1561	938	513	316	222
15°	4840	2720	635	195	219	1433
25°	9645	3224	374	450	459	4365
35°	10259	2458	170	173	168	6183
45°	5538	669	19	23	22	4330
55°	428	5	5	4	1	838
65°	2	3	5	3	0	3
75°	0	4	5	4	0	0
85°	0	4	6	4	0	0
90°	0	0	0	0	0	



TEST NUMBER: P209016

CATALOG NUMBER: LDSQA6A55927D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	987.7	987.7	987.7	987.7	987.7	987.7	987.7	987.7	987.7	987.7	987.7
2.5°	1428.4	1415.2	1420.7	1406.1	1369.3	1361.7	1361.0	1351.2	1320.0	1295.6	1266.4
5°	1906.6	1905.9	1909.4	1878.1	1813.5	1793.3	1783.6	1759.9	1684.2	1625.8	1561.1
7.5°	2503.7	2499.5	2495.3	2438.3	2336.9	2297.9	2272.9	2187.4	2083.2	1979.6	1864.2
10°	3202.2	3200.1	3184.2	3084.1	2921.4	2849.8	2801.2	2665.6	2498.1	2350.8	2154.7
12.5°	4013.4	3994.6	3966.1	3819.5	3596.3	3518.5	3411.4	3196.7	2939.5	2713.6	2439.7
15°	4839.8	4812.7	4762.0	4573.6	4297.0	4164.2	4031.5	3748.6	3399.6	3071.6	2720.5
17.5°	5648.2	5618.3	5499.5	5179.7	4909.3	4747.4	4600.0	4211.5	3801.4	3379.5	2934.6
20°	6815.9	6707.5	6500.4	5996.4	5493.9	5202.0	5029.6	4618.8	4111.4	3620.0	3086.8
22.5°	8375.7	8135.2	7693.8	6875.0	6157.0	5735.8	5453.6	4907.3	4334.5	3777.1	3180.7
25°	9644.9	9535.8	9033.9	7869.0	6748.5	6252.2	5859.5	5136.6	4497.2	3882.0	3223.8
27.5°	10463.0	10435.9	9862.5	8692.0	7231.6	6580.3	6141.7	5288.2	4575.7	3904.3	3202.9
30°	10716.0	10758.4	10207.9	8971.4	7371.3	6646.3	6166.7	5290.2	4515.2	3803.5	3069.5
32.5°	10697.3	10699.3	10024.4	8730.2	7144.0	6454.5	5958.2	5114.4	4292.1	3551.2	2815.8
35°	10259.4	10151.6	9388.4	7989.2	6615.1	6006.9	5545.3	4773.8	3924.4	3171.6	2457.8
37.5°	9298.1	9157.0	8267.3	7040.5	5988.8	5426.5	5053.9	4326.9	3486.5	2766.4	2088.0
40°	7943.4	7743.2	7009.2	6158.4	5303.5	4880.8	4568.1	3827.1	3018.0	2368.8	1741.2
42.5°	6587.3	6489.3	6004.1	5312.5	4727.2	4329.6	4003.0	3303.7	2567.6	1976.8	1302.6
45°	5537.7	5453.6	5127.6	4671.6	4097.5	3734.7	3419.8	2758.1	1994.9	1326.2	669.4
47.5°	4773.1	4705.0	4392.9	3914.0	3284.2	2887.4	2562.8	1808.6	1130.2	572.7	167.5
50°	3444.1	3374.6	3068.8	2514.1	1945.5	1613.3	1379.7	807.7	320.4	116.1	17.4
52.5°	1688.3	1631.3	1423.5	1065.6	715.2	514.4	376.0	151.5	36.8	12.5	8.3
55°	427.5	392.7	327.4	205.7	100.8	60.5	38.9	13.9	9.0	7.0	4.9
57.5°	24.3	23.6	21.5	16.0	11.8	10.4	9.0	7.0	4.9	4.2	3.5
60°	9.7	9.0	8.3	7.0	5.6	4.9	4.9	3.5	2.8	2.8	2.8
62.5°	4.2	4.2	4.2	3.5	2.8	2.8	2.8	2.1	2.8	2.8	2.8
65°	2.1	2.1	2.1	1.4	1.4	1.4	2.1	2.1	2.1	2.8	2.8
67.5°	1.4	0.7	0.7	0.7	1.4	1.4	1.4	2.1	2.1	2.8	2.8
70°	0.7	0.7	0.7	0.7	1.4	1.4	1.4	2.1	2.1	2.8	3.5
72.5°	0.0	0.7	0.7	0.7	1.4	1.4	1.4	2.1	2.1	2.8	3.5
75°	0.0	0.7	0.7	0.7	1.4	1.4	1.4	2.1	2.8	2.8	3.5
77.5°	0.0	0.7	0.7	0.7	1.4	1.4	1.4	2.1	2.8	2.8	3.5
80°	0.0	0.7	0.7	0.7	1.4	1.4	1.4	2.1	2.8	2.8	3.5
82.5°	0.0	0.0	0.7	0.7	1.4	1.4	1.4	2.1	2.8	2.8	3.5
85°	0.0	0.0	0.7	0.7	1.4	1.4	1.4	2.1	2.8	2.8	3.5
87.5°	0.0	0.0	0.7	0.7	1.4	1.4	1.4	2.1	2.1	2.8	3.5
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: P209016

CATALOG NUMBER: LDSQA6A55927D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	987.7	987.7	987.7	987.7	987.7	987.7	987.7	987.7	987.7	987.7	987.7
2.5°	1228.9	1203.9	1167.0	1142.7	1119.1	1096.8	1060.0	1039.1	1001.6	966.9	937.0
5°	1483.3	1420.7	1345.0	1280.3	1238.6	1197.6	1123.2	1068.3	999.5	937.7	880.7
7.5°	1740.5	1630.0	1505.5	1399.2	1334.6	1271.3	1160.1	1071.1	973.8	885.5	801.4
10°	1974.0	1807.9	1632.0	1479.8	1392.2	1310.2	1163.6	1045.4	920.3	811.2	705.5
12.5°	2190.9	1963.6	1734.2	1535.4	1427.0	1328.3	1149.0	1004.4	855.6	726.4	603.3
15°	2384.1	2092.2	1808.6	1567.4	1440.2	1323.4	1114.9	946.7	779.2	634.6	478.9
17.5°	2530.8	2172.1	1841.3	1562.5	1416.6	1286.6	1056.5	874.4	697.9	522.7	346.8
20°	2619.8	2206.2	1834.3	1525.0	1365.8	1228.2	987.0	795.9	599.9	401.8	305.8
22.5°	2657.3	2203.4	1801.6	1468.7	1303.3	1164.3	920.3	719.4	497.0	363.5	319.0
25°	2663.5	2174.9	1755.8	1406.8	1241.4	1103.1	852.9	632.5	431.6	374.0	357.3
27.5°	2615.6	2108.2	1669.6	1317.9	1154.5	1011.3	752.1	502.5	405.2	372.6	383.7
30°	2473.8	1956.0	1517.4	1161.5	1003.7	860.5	537.3	394.1	336.4	338.5	341.3
32.5°	2224.3	1702.9	1272.7	932.8	760.4	567.2	334.3	263.4	255.8	255.8	254.4
35°	1891.3	1393.6	998.8	590.1	378.1	272.5	173.1	173.8	170.3	169.6	168.9
37.5°	1547.2	1099.6	632.5	244.0	164.0	114.0	102.2	103.6	102.2	104.3	102.9
40°	1219.9	679.1	230.8	77.8	57.7	55.6	57.0	58.4	58.4	59.8	59.8
42.5°	709.0	225.2	60.5	31.3	31.3	29.9	30.6	32.0	32.7	33.4	32.7
45°	210.6	46.6	19.5	17.4	17.4	16.7	16.7	17.4	18.1	18.8	18.8
47.5°	33.4	13.2	11.1	9.7	9.7	9.7	9.7	9.7	10.4	10.4	11.1
50°	10.4	8.3	7.0	6.3	6.3	5.6	5.6	6.3	6.3	6.3	7.0
52.5°	6.3	4.9	4.9	4.2	4.9	4.9	4.2	4.9	4.9	4.9	5.6
55°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.9	4.9	4.9
57.5°	3.5	3.5	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
60°	3.5	3.5	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.9
62.5°	3.5	3.5	4.2	4.2	4.2	4.2	4.2	4.2	4.9	4.9	4.9
65°	3.5	3.5	4.2	4.2	4.2	4.2	4.2	4.9	4.9	4.9	4.9
67.5°	3.5	4.2	4.2	4.2	4.2	4.9	4.9	4.9	4.9	4.9	4.9
70°	3.5	4.2	4.2	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
72.5°	3.5	4.2	4.2	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
75°	4.2	4.2	4.2	4.9	4.9	4.9	4.9	4.9	4.9	4.9	5.6
77.5°	4.2	4.2	4.9	4.9	4.9	4.9	4.9	4.9	5.6	5.6	5.6
80°	4.2	4.2	4.9	4.9	4.9	4.9	4.9	5.6	5.6	5.6	5.6
82.5°	4.2	4.2	4.9	4.9	4.9	4.9	4.9	5.6	5.6	5.6	5.6
85°	4.2	4.2	4.9	4.9	4.9	4.9	4.9	5.6	5.6	5.6	5.6
87.5°	4.2	4.2	4.9	4.9	4.9	4.9	4.9	5.6	5.6	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: P209016

CATALOG NUMBER: LDSQA6A55927D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	987.7	987.7	987.7	987.7	987.7	987.7	987.7	987.7	987.7	987.7	987.7
2.5°	911.2	879.3	864.0	842.4	827.1	793.1	779.2	755.6	736.1	704.1	706.2
5°	832.0	771.5	730.5	698.6	676.3	622.1	586.0	547.7	513.0	469.9	453.9
7.5°	722.2	647.8	585.3	547.0	518.5	446.2	366.3	303.7	256.5	222.4	209.2
10°	612.4	515.7	416.4	357.3	316.3	246.8	211.3	194.6	179.3	160.6	148.1
12.5°	484.5	346.8	256.5	232.9	216.2	193.2	170.3	152.2	155.7	156.4	161.3
15°	330.9	249.5	221.0	205.0	187.0	173.8	181.4	186.3	195.3	196.0	202.3
17.5°	269.0	234.2	211.3	210.6	212.0	219.6	231.5	237.7	249.5	252.3	261.3
20°	269.0	248.8	268.3	268.3	271.8	282.2	297.5	306.5	319.7	324.6	335.7
22.5°	306.5	320.4	344.8	347.5	348.9	360.1	379.5	388.5	403.8	406.6	418.4
25°	374.0	386.5	408.7	410.8	411.5	419.8	434.4	439.3	449.7	444.2	451.1
27.5°	395.5	401.1	415.0	416.4	412.9	416.4	421.9	421.9	425.4	414.3	416.4
30°	347.5	348.9	355.9	356.6	348.9	350.3	351.0	350.3	349.6	337.8	337.8
32.5°	257.9	257.9	266.9	264.8	256.5	258.6	258.6	258.6	257.9	248.1	246.8
35°	171.0	171.7	179.3	177.9	171.7	173.1	173.1	175.2	173.1	167.5	166.1
37.5°	104.3	105.0	108.4	109.1	107.0	107.7	108.4	107.7	109.1	106.3	105.0
40°	60.5	61.9	64.6	65.3	64.6	64.6	65.3	66.0	68.8	65.3	63.9
42.5°	35.4	36.1	37.5	37.5	37.5	37.5	38.2	38.9	39.6	38.9	38.2
45°	20.2	20.9	21.5	21.5	22.2	21.5	22.2	22.2	22.9	22.2	22.2
47.5°	11.8	11.8	12.5	12.5	13.2	12.5	13.2	13.2	13.2	12.5	12.5
50°	7.0	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.0	7.0
52.5°	5.6	5.6	5.6	5.6	5.6	4.9	4.9	4.9	4.9	4.2	4.2
55°	4.9	4.9	4.9	4.9	4.9	4.9	4.2	3.5	3.5	2.8	2.8
57.5°	4.2	4.9	4.9	4.9	4.9	4.2	4.2	3.5	2.8	2.1	2.1
60°	4.9	4.9	4.9	4.9	4.2	4.2	4.2	3.5	2.8	2.1	2.1
62.5°	4.9	4.9	4.9	4.9	4.9	4.2	4.2	3.5	2.8	2.1	2.1
65°	4.9	4.9	4.9	4.9	4.9	4.2	4.2	3.5	2.8	2.1	2.1
67.5°	4.9	4.9	4.9	4.9	4.9	4.2	4.2	3.5	2.8	2.8	2.1
70°	4.9	5.6	5.6	4.9	4.9	4.9	4.2	3.5	3.5	2.8	2.1
72.5°	4.9	5.6	5.6	4.9	4.9	4.9	4.2	3.5	3.5	2.8	2.1
75°	5.6	5.6	5.6	5.6	4.9	4.9	4.2	4.2	3.5	2.8	2.1
77.5°	5.6	5.6	5.6	5.6	4.9	4.9	4.2	4.2	3.5	2.8	2.1
80°	5.6	5.6	5.6	5.6	5.6	4.9	4.9	4.2	3.5	2.8	2.8
82.5°	5.6	5.6	5.6	5.6	5.6	4.9	4.9	4.2	3.5	2.8	2.8
85°	5.6	5.6	5.6	5.6	5.6	4.9	4.9	4.2	3.5	2.8	2.1
87.5°	5.6	5.6	5.6	5.6	4.9	4.9	4.2	4.2	3.5	2.8	2.1
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: P209016

CATALOG NUMBER: LDSQA6A55927D010TE LARH20SP 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	987.7	987.7	987.7	987.7	987.7	987.7	987.7	987.7
2.5°	680.5	664.5	657.5	668.7	663.1	646.4	649.9	639.5
5°	405.9	381.6	366.3	373.3	351.0	330.9	330.9	316.3
7.5°	196.0	188.4	184.2	185.6	180.7	174.5	171.0	171.0
10°	137.6	134.8	135.5	135.5	139.7	139.0	141.1	140.4
12.5°	163.3	164.7	165.4	168.2	171.7	171.7	173.8	172.4
15°	209.2	207.8	212.0	212.7	218.3	218.9	221.7	218.9
17.5°	266.2	269.0	273.2	272.5	283.6	284.3	284.3	283.6
20°	342.7	344.8	348.9	350.3	363.5	364.9	369.8	370.5
22.5°	426.1	426.1	428.2	430.9	443.5	444.2	446.2	446.2
25°	454.6	450.4	451.1	454.6	461.5	458.8	460.8	459.4
27.5°	417.7	411.5	410.1	415.0	419.8	412.2	415.0	415.0
30°	339.2	333.6	332.2	337.1	340.6	332.2	335.0	336.4
32.5°	248.1	244.7	244.0	247.4	250.2	243.3	246.1	248.1
35°	167.5	166.1	164.7	165.4	169.6	164.0	166.8	168.2
37.5°	106.3	103.6	104.3	105.7	108.4	105.0	107.7	107.7
40°	65.3	63.9	63.9	65.3	66.7	63.9	65.3	66.0
42.5°	38.2	38.2	38.2	38.9	39.6	38.2	38.2	38.9
45°	22.2	21.5	21.5	22.2	22.9	21.5	22.2	22.2
47.5°	12.5	11.8	11.8	12.5	12.5	11.8	12.5	12.5
50°	7.0	6.3	6.3	7.0	7.0	6.3	6.3	6.3
52.5°	3.5	3.5	3.5	3.5	3.5	3.5	2.8	2.8
55°	2.1	2.1	1.4	1.4	1.4	1.4	1.4	0.7
57.5°	1.4	1.4	0.7	0.7	0.7	0.7	0.0	0.0
60°	1.4	1.4	0.7	0.7	0.7	0.0	0.0	0.0
62.5°	1.4	1.4	0.7	0.7	0.7	0.0	0.0	0.0
65°	1.4	1.4	0.7	0.7	0.7	0.0	0.0	0.0
67.5°	1.4	1.4	0.7	0.7	0.7	0.0	0.0	0.0
70°	2.1	1.4	1.4	0.7	0.7	0.7	0.0	0.0
72.5°	2.1	1.4	1.4	1.4	0.7	0.7	0.0	0.0
75°	2.1	1.4	1.4	1.4	0.7	0.7	0.0	0.0
77.5°	2.1	1.4	1.4	1.4	0.7	0.7	0.7	0.0
80°	2.1	1.4	1.4	1.4	0.7	0.7	0.7	0.7
82.5°	2.1	1.4	1.4	1.4	0.7	0.7	0.7	0.7
85°	2.1	1.4	1.4	1.4	0.7	0.7	0.7	0.0
87.5°	2.1	1.4	1.4	1.4	0.7	0.7	0.7	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)