

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: P209048

Luminaire Tested: **LDSQA6A55927D010TE LARH30NF 6LSQA1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P209048
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26687)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA6A55927D010TE LARH30NF 6LSQA1H 30°
Description: PORTFOLIO 6" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,
SELF-FLANGED, 30° NARROW FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3822.7 lumens
Efficiency: N/A
Efficacy: 62.9 lumens/watt
Spacing Criteria (0/90/45): 2.58 / 0.47 / 1.37
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
CIE Type: Direct

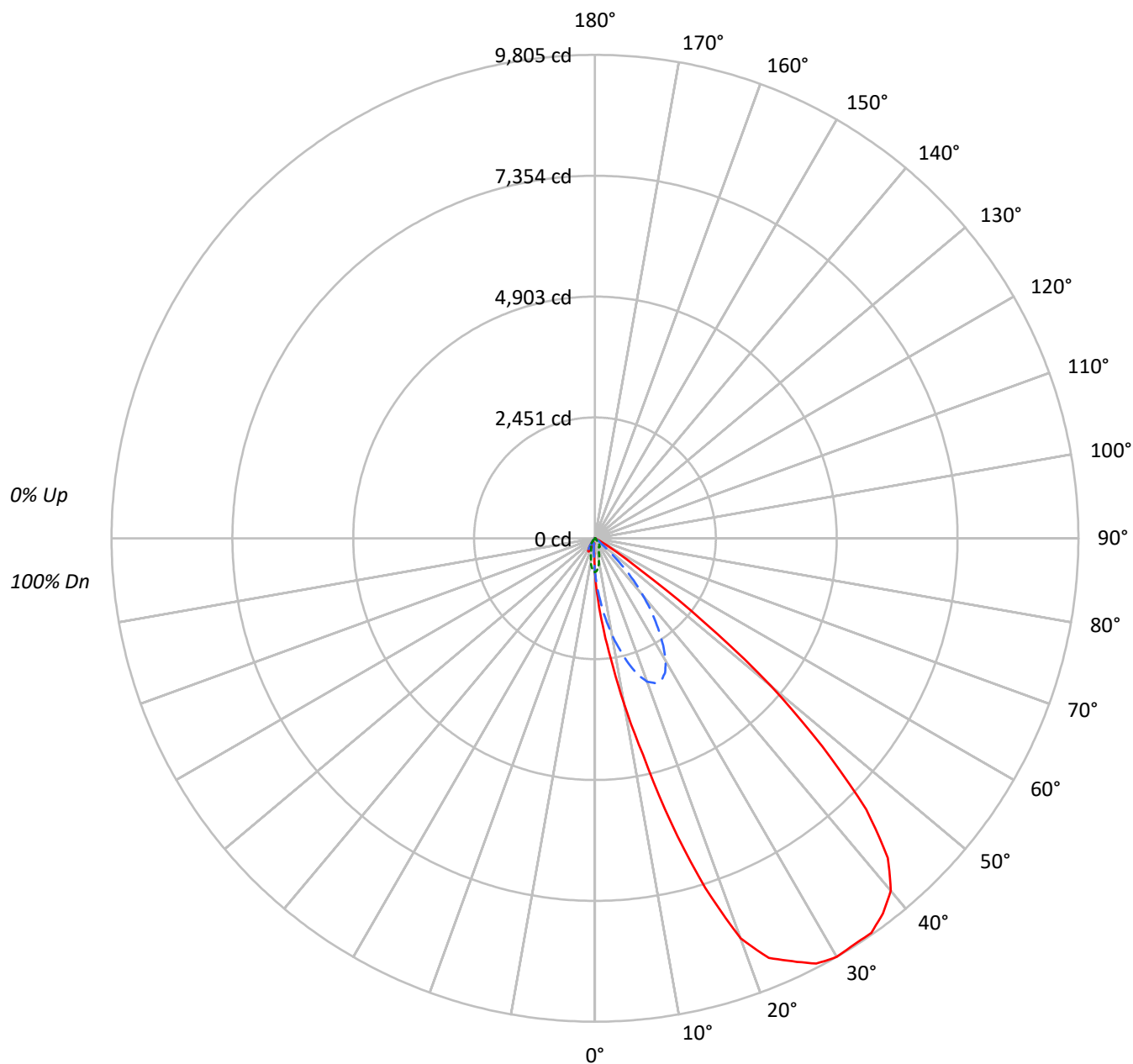
Input Watts (W): 60.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20
RC	80					70					50					30					10
RW	70	50	30	10		70	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
1	112	109	106	103		110	107	104	102		103	100	98		99	97	95		95	94	93
2	105	99	94	90		103	97	93	89		94	90	87		91	88	85		88	85	83
3	98	90	84	79		96	89	83	78		86	81	77		83	79	76		81	77	74
4	91	82	75	70		89	81	74	69		78	73	68		76	71	67		74	70	67
5	85	74	67	62		83	73	67	61		71	65	61		70	64	60		68	63	60
6	79	68	60	55		77	67	60	55		65	59	54		64	58	54		62	57	54
7	74	62	55	49		72	61	54	49		60	53	49		59	53	49		57	52	48
8	69	57	49	44		67	56	49	44		55	49	44		54	48	44		53	47	43
9	64	52	45	40		63	52	45	40		51	44	40		50	44	40		49	43	39
10	60	48	41	36		59	48	41	36		47	40	36		46	40	36		45	40	36

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	29687	29687	29687
5°	76154	27008	8411
10°	148446	20754	4040
15°	266480	14099	5420
20°	395637	10699	8948
25°	449703	8817	14033
30°	487484	9640	13200
35°	513481	6250	8184
40°	524585	2771	3985
45°	473803	1059	1480
50°	311892	422	422
55°	85409	368	0
60°	17059	422	0
65°	1202	571	0
70°	176	705	0
75°	0	1048	0
80°	0	1562	174
85°	0	3112	346



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	84.5	2.2
10°-20°	448.7	11.7
20°-30°	1017.0	26.6
30°-40°	1220.8	31.9
40°-50°	860.4	22.5
50°-60°	177.5	4.6
60°-70°	6.3	0.2
70°-80°	3.8	0.1
80°-90°	3.7	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°	1550.2	40.6
0°-40°	2771.0	72.5
0°-60°	3808.9	99.6
0°-90°	3822.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3822.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	690	690	690	690	690	
5°	1762	1284	625	260	195	217
15°	5978	2630	316	113	122	1774
25°	9466	3181	186	260	295	4369
35°	9769	2228	119	156	156	6073
45°	7781	764	17	24	24	5723
55°	1138	15	5	4	0	1499
65°	12	4	6	4	0	35
75°	0	4	6	4	0	0
85°	0	4	6	4	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°	689.5	689.5	689.5	689.5	689.5	689.5	689.5	689.5	689.5	689.5	689.5
2.5°	1175.4	1139.9	1153.8	1112.8	1103.8	1096.1	1103.8	1059.3	1034.3	1002.3	976.6
5°	1762.0	1719.6	1729.3	1657.7	1625.1	1602.8	1598.7	1506.9	1438.1	1362.3	1283.8
7.5°	2452.9	2412.6	2407.0	2295.8	2228.4	2190.2	2174.2	2042.8	1924.0	1789.1	1641.8
10°	3395.4	3303.7	3275.2	3113.9	2985.3	2904.0	2803.9	2594.0	2385.5	2181.8	1994.2
12.5°	4492.2	4442.2	4371.3	4087.0	3861.8	3746.4	3597.0	3268.9	2953.3	2616.9	2302.8
15°	5978.3	5800.4	5679.4	5268.6	4905.8	4727.9	4509.6	4007.8	3531.0	3104.9	2630.1
17.5°	7430.3	7337.2	7148.1	6615.0	6056.1	5775.3	5450.0	4768.2	4094.7	3488.6	2908.9
20°	8634.8	8547.3	8331.8	7829.3	7209.3	6795.0	6385.6	5450.0	4570.1	3794.4	3095.1
22.5°	9211.8	9156.1	8980.3	8550.0	8021.8	7627.7	7187.7	6030.4	4921.8	3994.6	3179.9
25°	9466.1	9440.4	9327.1	8987.9	8490.3	8155.9	7740.3	6441.2	5140.7	4087.7	3181.3
27.5°	9724.0	9728.9	9478.7	9210.4	8738.4	8417.3	8016.9	6623.3	5180.4	4035.6	3077.1
30°	9805.3	9753.9	9643.4	9258.3	8810.0	8468.7	8039.2	6539.2	5017.7	3821.5	2869.2
32.5°	9772.0	9751.8	9630.2	9222.9	8688.4	8312.3	7824.4	6205.6	4696.6	3515.7	2574.5
35°	9769.2	9731.7	9452.9	9103.3	8445.1	7980.8	7337.8	5666.2	4242.0	3112.5	2227.7
37.5°	9592.7	9499.5	9290.3	8819.0	7951.6	7362.9	6642.1	5007.3	3686.0	2660.0	1883.6
40°	9333.4	9208.3	8933.0	8219.9	7096.7	6418.3	5714.9	4258.7	3097.2	2213.8	1518.0
42.5°	8791.9	8602.9	8213.6	7232.9	5957.4	5345.8	4760.5	3500.4	2525.9	1803.7	1158.7
45°	7781.3	7522.7	6996.6	5919.9	4812.7	4313.6	3843.0	2816.4	2022.0	1338.0	763.9
47.5°	6254.2	6014.4	5535.5	4712.6	3774.2	3352.3	2977.0	2094.9	1370.7	775.0	364.9
50°	4656.3	4450.5	4076.6	3275.2	2533.5	2202.0	1880.9	1190.0	642.2	368.4	151.5
52.5°	2778.2	2676.0	2344.5	1816.2	1251.1	1078.1	865.4	503.9	323.9	133.5	41.0
55°	1137.8	1050.2	925.8	743.0	544.2	461.5	394.8	248.8	100.8	27.8	15.3
57.5°	514.4	494.9	438.6	344.8	250.2	209.9	141.8	47.3	22.2	13.9	9.0
60°	198.1	178.6	152.9	82.7	35.4	29.9	24.3	16.0	11.1	7.6	5.6
62.5°	28.5	27.1	24.3	19.5	15.3	13.9	11.8	8.3	6.3	4.9	4.2
65°	11.8	11.8	10.4	8.3	7.0	6.3	5.6	4.2	3.5	3.5	3.5
67.5°	4.9	4.9	4.2	3.5	2.8	2.8	2.8	2.1	2.8	2.8	3.5
70°	1.4	1.4	1.4	1.4	1.4	1.4	2.1	2.1	2.8	2.8	3.5
72.5°	0.0	0.0	0.7	0.7	1.4	1.4	1.4	2.1	2.8	3.5	3.5
75°	0.0	0.0	0.7	0.7	1.4	1.4	1.4	2.1	2.8	3.5	3.5
77.5°	0.0	0.0	0.7	0.7	1.4	1.4	2.1	2.1	2.8	3.5	3.5
80°	0.0	0.0	0.7	0.7	1.4	1.4	2.1	2.1	2.8	3.5	4.2
82.5°	0.0	0.0	0.7	0.7	1.4	1.4	2.1	2.1	2.8	3.5	4.2
85°	0.0	0.0	0.7	0.7	1.4	1.4	2.1	2.1	2.8	3.5	4.2
87.5°	0.0	0.0	0.7	0.7	1.4	1.4	2.1	2.1	2.8	3.5	4.2
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°	689.5	689.5	689.5	689.5	689.5	689.5	689.5	689.5	689.5	689.5	689.5
2.5°	954.3	909.8	897.3	858.4	825.7	809.8	789.6	744.4	710.4	665.2	638.1
5°	1228.9	1144.8	1078.1	996.7	943.2	908.5	854.2	771.5	704.8	624.9	567.9
7.5°	1525.7	1372.1	1251.8	1117.7	1040.5	980.0	887.6	768.7	670.7	564.4	476.1
10°	1812.0	1582.7	1393.6	1201.1	1099.6	1015.5	888.3	738.9	608.9	474.7	381.6
12.5°	2064.4	1768.3	1502.0	1254.6	1128.8	1023.8	864.7	685.3	528.3	390.6	308.6
15°	2275.0	1912.1	1578.5	1274.8	1130.9	1005.8	815.3	608.9	438.6	316.3	258.6
17.5°	2434.8	1987.9	1602.1	1250.4	1090.6	954.3	739.6	512.3	355.9	268.3	217.6
20°	2517.5	2002.5	1568.1	1184.4	1016.2	876.5	640.2	415.7	301.7	233.5	182.1
22.5°	2528.0	1961.5	1486.8	1089.9	922.4	782.0	530.3	346.8	269.0	206.4	160.6
25°	2466.1	1872.5	1370.7	982.8	819.5	673.5	431.6	310.7	244.7	185.6	184.9
27.5°	2334.0	1719.6	1231.7	858.4	695.1	547.7	366.3	280.8	218.3	196.7	209.2
30°	2147.8	1523.6	1060.7	701.3	542.8	421.2	308.6	231.5	191.8	193.9	204.4
32.5°	1895.5	1280.3	859.8	513.7	388.5	317.0	231.5	157.8	159.2	159.9	168.9
35°	1578.5	1026.6	642.2	345.4	273.2	223.1	130.7	116.1	118.2	118.9	125.1
37.5°	1265.0	788.9	426.8	230.1	171.7	117.5	81.3	77.8	79.2	78.5	85.5
40°	968.9	549.8	255.8	114.0	66.0	54.9	50.0	48.0	48.7	49.3	53.5
42.5°	686.0	298.2	126.5	43.1	34.8	32.0	29.9	28.5	29.2	29.2	32.0
45°	348.2	141.1	43.1	23.6	21.5	19.5	18.1	17.4	17.4	17.4	18.8
47.5°	150.8	46.6	20.2	14.6	13.2	12.5	11.1	10.4	10.4	10.4	11.1
50°	47.3	18.8	12.5	9.7	8.3	7.6	7.0	7.0	7.0	6.3	7.0
52.5°	17.4	11.8	8.3	6.3	5.6	5.6	5.6	4.9	5.6	4.9	5.6
55°	10.4	7.6	5.6	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
57.5°	7.0	5.6	4.9	4.9	4.2	4.2	4.9	4.9	4.9	4.9	4.9
60°	4.9	4.9	4.2	4.2	4.2	4.2	4.9	4.9	4.9	4.9	4.9
62.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.9	4.9	4.9	4.9	5.6
65°	3.5	4.2	4.2	4.2	4.2	4.2	4.9	4.9	5.6	5.6	5.6
67.5°	3.5	4.2	4.2	4.9	4.9	4.9	4.9	5.6	5.6	5.6	5.6
70°	4.2	4.2	4.9	4.9	4.9	4.9	5.6	5.6	5.6	5.6	6.3
72.5°	4.2	4.2	4.9	4.9	4.9	4.9	5.6	5.6	6.3	6.3	6.3
75°	4.2	4.9	4.9	4.9	4.9	5.6	5.6	5.6	6.3	6.3	6.3
77.5°	4.2	4.9	4.9	5.6	5.6	5.6	5.6	6.3	6.3	6.3	6.3
80°	4.2	4.9	4.9	5.6	5.6	5.6	6.3	6.3	6.3	6.3	7.0
82.5°	4.2	4.9	4.9	5.6	5.6	5.6	6.3	6.3	6.3	6.3	7.0
85°	4.9	4.9	5.6	5.6	5.6	5.6	6.3	6.3	6.3	6.3	7.0
87.5°	4.9	4.9	5.6	5.6	5.6	5.6	6.3	6.3	7.0	6.3	7.0
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°	689.5	689.5	689.5	689.5	689.5	689.5	689.5	689.5	689.5	689.5	689.5
2.5°	601.9	561.6	533.8	523.4	503.2	471.3	452.5	435.1	402.4	395.5	377.4
5°	502.5	437.9	392.0	374.6	351.7	324.6	298.2	280.8	260.0	251.6	239.1
7.5°	396.2	331.5	291.9	278.0	262.0	239.8	216.2	198.8	177.2	166.1	155.7
10°	311.4	263.4	230.1	216.2	199.5	175.9	151.5	128.6	109.8	98.0	95.9
12.5°	253.0	213.4	177.9	163.3	143.9	120.2	102.9	102.2	100.8	100.1	101.5
15°	207.1	168.9	131.4	115.4	109.8	109.1	111.2	113.3	112.6	114.7	116.1
17.5°	170.3	129.3	120.9	121.6	122.3	124.4	127.9	133.5	134.1	137.6	140.4
20°	139.0	136.9	140.4	143.2	145.3	149.4	157.1	164.0	166.1	171.0	176.5
22.5°	157.8	164.0	171.7	175.2	177.9	185.6	193.9	205.0	209.2	215.5	223.1
25°	190.4	200.9	212.7	216.9	221.0	233.5	243.3	256.5	260.0	267.6	275.2
27.5°	217.6	228.7	241.2	246.7	250.2	262.7	271.1	279.4	279.4	283.6	289.1
30°	213.4	222.4	232.8	237.0	238.4	247.4	255.8	258.6	257.2	259.3	263.4
32.5°	177.2	184.2	192.5	196.0	197.4	203.7	210.6	210.6	209.9	209.9	212.7
35°	131.4	136.2	140.4	143.9	146.0	150.1	156.4	155.7	155.7	154.3	156.4
37.5°	88.3	91.1	95.9	97.3	98.0	100.8	105.7	105.7	104.3	105.0	106.3
40°	53.5	57.0	59.8	60.5	61.9	63.9	67.4	67.4	67.4	67.4	68.1
42.5°	32.0	34.1	36.1	36.1	36.8	39.6	41.0	41.0	41.0	41.0	41.7
45°	18.8	19.5	20.9	21.5	21.5	22.9	23.6	23.6	23.6	23.6	24.3
47.5°	11.1	11.8	11.8	12.5	12.5	13.2	13.9	13.9	13.2	13.2	13.2
50°	7.0	7.0	7.0	7.0	7.6	7.6	7.6	7.6	7.6	7.6	7.0
52.5°	5.6	5.6	5.6	5.6	4.9	4.9	4.9	4.9	4.2	4.2	3.5
55°	4.9	4.9	4.9	4.9	4.9	4.2	4.2	4.2	3.5	2.8	2.1
57.5°	4.9	4.9	4.9	4.9	4.9	4.2	4.2	3.5	2.8	2.8	2.1
60°	4.9	4.9	4.9	4.9	4.9	4.2	4.2	3.5	2.8	2.8	2.1
62.5°	5.6	5.6	4.9	4.9	4.9	4.2	4.2	3.5	3.5	2.8	2.1
65°	5.6	5.6	4.9	4.9	4.9	4.9	4.2	4.2	3.5	2.8	2.1
67.5°	5.6	5.6	5.6	5.6	4.9	4.9	4.9	4.2	3.5	2.8	2.1
70°	6.3	6.3	5.6	5.6	5.6	4.9	4.9	4.2	3.5	3.5	2.8
72.5°	6.3	6.3	5.6	5.6	5.6	5.6	4.9	4.2	4.2	3.5	2.8
75°	6.3	6.3	6.3	6.3	5.6	5.6	4.9	4.9	4.2	3.5	2.8
77.5°	6.3	6.3	6.3	6.3	5.6	5.6	5.6	4.9	4.2	3.5	2.8
80°	6.3	6.3	6.3	6.3	6.3	5.6	5.6	4.9	4.2	3.5	2.8
82.5°	7.0	7.0	6.3	6.3	6.3	5.6	5.6	4.9	4.2	3.5	3.5
85°	7.0	7.0	6.3	6.3	6.3	5.6	5.6	4.9	4.2	4.2	3.5
87.5°	7.0	7.0	6.3	6.3	6.3	5.6	5.6	4.9	4.2	4.2	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: P209048

CATALOG NUMBER: LDSQA6A55927D010TE LARH30NF 6LSQA1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	689.5	689.5	689.5	689.5	689.5	689.5	689.5	689.5
2.5°	366.3	345.4	338.5	343.4	337.8	333.6	328.1	325.3
5°	229.4	214.1	209.2	210.6	205.7	201.6	196.0	194.6
7.5°	141.1	126.5	120.9	120.9	115.4	110.5	107.0	105.0
10°	94.5	91.7	92.4	93.1	92.4	93.1	91.1	92.4
12.5°	101.5	100.1	101.5	102.2	102.2	103.6	100.8	102.9
15°	118.2	116.8	118.9	120.2	120.2	122.3	119.6	121.6
17.5°	144.6	143.9	147.4	148.7	149.4	152.9	149.4	152.2
20°	182.8	182.1	187.0	189.1	188.4	195.3	190.4	195.3
22.5°	232.2	230.8	237.7	239.8	240.5	249.5	245.4	248.8
25°	281.5	282.9	286.4	289.8	290.5	298.2	291.9	295.4
27.5°	291.9	289.8	291.9	296.1	296.8	300.3	294.7	297.5
30°	264.1	260.7	261.3	266.2	267.6	269.0	264.1	265.5
32.5°	214.8	209.2	209.2	214.1	215.5	217.6	209.2	212.7
35°	158.5	153.6	153.6	157.1	157.8	159.2	152.9	155.7
37.5°	108.4	104.3	105.7	107.0	107.7	109.1	108.4	107.7
40°	69.5	66.7	68.8	68.8	69.5	70.2	70.2	70.9
42.5°	42.4	40.3	41.7	41.7	42.4	42.4	42.4	43.1
45°	24.3	23.6	23.6	24.3	24.3	24.3	23.6	24.3
47.5°	13.2	12.5	13.2	13.2	13.2	13.2	13.2	13.2
50°	7.0	6.3	6.3	6.3	6.3	6.3	6.3	6.3
52.5°	3.5	2.8	2.8	2.8	2.1	2.8	2.1	2.1
55°	2.1	1.4	1.4	1.4	0.7	0.7	0.0	0.0
57.5°	1.4	0.7	0.7	0.7	0.0	0.0	0.0	0.0
60°	1.4	0.7	0.7	0.7	0.0	0.0	0.0	0.0
62.5°	1.4	0.7	0.7	0.7	0.0	0.0	0.0	0.0
65°	1.4	0.7	0.7	0.7	0.0	0.0	0.0	0.0
67.5°	2.1	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	0.0	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	2.1	1.4	1.4	0.7	0.7	0.7	0.0
80°	2.8	2.1	1.4	1.4	1.4	0.7	0.7	0.7
82.5°	2.8	2.1	1.4	1.4	1.4	0.7	0.7	0.7
85°	2.8	2.1	2.1	1.4	1.4	0.7	0.7	0.7
87.5°	2.8	2.1	2.1	1.4	1.4	0.7	0.7	0.7
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)