

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: P179949

Luminaire Tested: **LDA6A65830D010TE LARH40FL 6LAL1LI 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P179949
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26691)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA6A65830D010TE LARH40FL 6LAL1LI 30°
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 40° Flood, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6180.3 lumens
Efficiency: N/A
Efficacy: 79.2 lumens/watt
Spacing Criteria (0/90/45): 2.62 / 0.52 / 1.36
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

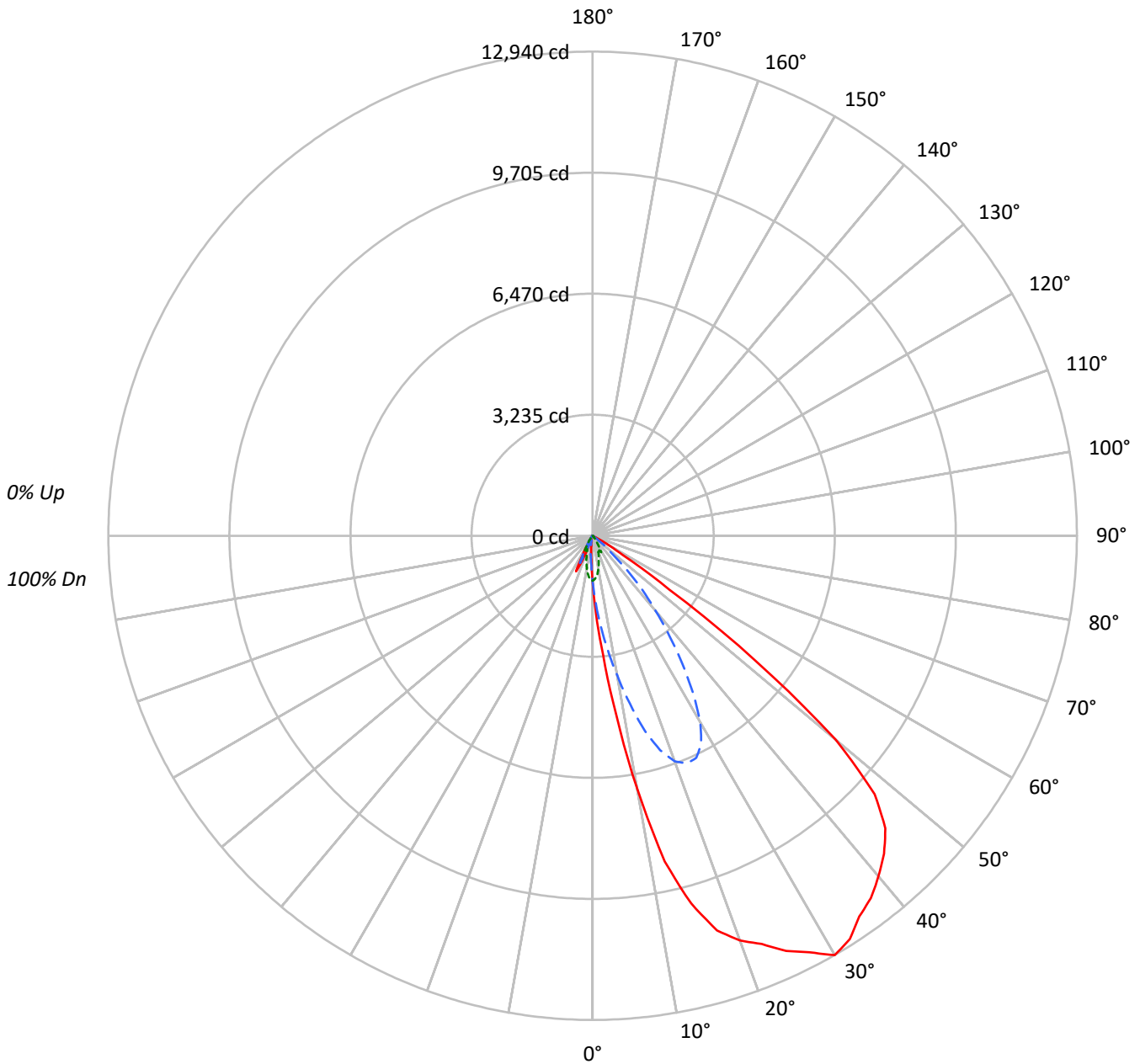
Input Watts (W): 78
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	67	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	54	49	59	53	49	57	52	48	47																			
8	69	57	50	44	67	56	49	44	55	49	44	54	48	44	53	48	44	42																			
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	44	40	38																			
10	60	48	41	37	59	48	41	36	47	41	36	46	40	36	45	40	36	34																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	66003	66003	66003
5°	175159	61193	23415
10°	382341	49481	6975
15°	577115	36158	6067
20°	671312	24823	9527
25°	740347	26778	63433
30°	819113	20161	19725
35°	831278	10313	7388
40°	850400	4194	3535
45°	857539	2582	2140
50°	722390	1765	1373
55°	238606	1204	765
60°	46904	1129	504
65°	5513	1492	597
70°	1475	1651	737
75°	233	2182	1207
80°	0	3631	1799
85°	0	7233	2893



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	160.2	2.6
10°-20°	809.1	13.1
20°-30°	1596.9	25.8
30°-40°	1801.3	29.1
40°-50°	1430.0	23.1
50°-60°	349.6	5.7
60°-70°	18.7	0.3
70°-80°	7.9	0.1
80°-90°	6.6	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°	2566.2	41.5
0°-40°	4367.5	70.7
0°-60°	6147.1	99.5
0°-90°	6180.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6180.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1204	1204	1204	1204	1204	
5°	3183	2385	1112	559	426	420
15°	10169	5405	637	125	107	2852
25°	12240	6551	443	802	1049	5669
35°	12421	4170	154	122	110	7812
45°	11061	1299	33	34	28	8290
55°	2496	56	13	13	8	2929
65°	42	10	12	9	5	104
75°	1	6	10	9	6	3
85°	0	6	12	8	5	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°	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0
2.5°	2089.4	2049.2	2067.6	2038.8	1957.2	1931.9	1952.6	1921.5	1828.4	1792.7	1755.9
5°	3183.0	3147.3	3158.8	3093.3	2940.3	2887.4	2884.0	2789.7	2601.1	2495.3	2384.9
7.5°	4826.2	4776.8	4763.0	4605.4	4311.0	4200.7	4146.6	3914.3	3559.0	3307.2	3059.9
10°	6868.5	6916.8	6867.3	6612.0	6149.8	5942.8	5811.7	5372.4	4731.9	4252.4	3790.1
12.5°	8916.5	8946.4	8853.2	8535.8	7948.2	7699.9	7506.7	6944.4	6100.3	5286.2	4596.2
15°	10168.7	10310.2	10222.8	10000.8	9545.5	9244.2	9070.6	8376.0	7313.5	6418.8	5404.6
17.5°	11061.1	11192.2	11119.7	10938.0	10424.0	10181.4	10068.7	9497.2	8340.4	7203.1	6009.5
20°	11507.2	11667.1	11601.5	11395.7	11018.5	10816.1	10679.3	10121.6	9078.6	7786.1	6413.1
22.5°	11809.7	11986.8	11915.5	11728.0	11344.0	11108.2	11043.8	10516.0	9465.0	8135.7	6584.4
25°	12239.7	12388.1	12186.8	11955.7	11576.2	11327.9	11288.8	10749.4	9650.1	8267.9	6551.1
27.5°	12547.9	12723.9	12382.3	12147.7	11714.2	11453.2	11402.6	10895.5	9667.4	8163.3	6280.9
30°	12940.0	12826.2	12526.1	12185.7	11723.4	11445.1	11380.7	10810.4	9494.9	7778.1	5751.9
32.5°	12784.8	12757.2	12457.1	12056.9	11625.7	11345.1	11258.9	10548.2	9021.1	7113.4	5003.3
35°	12421.4	12508.8	12258.1	12009.8	11473.9	11181.8	11062.2	10161.8	8307.0	6257.9	4169.6
37.5°	12208.7	12263.9	12105.2	11801.6	11270.4	10886.3	10659.7	9512.1	7372.1	5179.2	3365.8
40°	11883.3	12023.6	11870.6	11522.2	10909.3	10382.6	9988.2	8338.1	6140.6	4083.4	2632.2
42.5°	11526.8	11652.1	11506.1	11088.7	10222.8	9516.7	8861.3	6958.2	4807.8	3119.7	1974.4
45°	11061.1	11173.8	10911.6	10261.9	9036.1	8062.1	7407.8	5464.4	3625.7	2291.8	1299.4
47.5°	10221.6	10191.7	9820.3	8810.7	7300.8	6428.0	5666.8	3914.3	2410.2	1298.3	646.3
50°	8470.3	8190.9	7644.7	6472.9	4899.8	3956.9	3437.1	2020.4	1093.6	629.0	405.9
52.5°	5486.3	5174.6	4674.4	3592.3	2352.7	1888.2	1514.4	913.0	570.4	355.3	159.8
55°	2496.5	2275.7	1956.0	1451.2	1009.6	839.4	710.6	462.3	305.9	132.2	56.3
57.5°	951.0	877.4	779.6	622.1	466.9	403.6	334.6	221.9	95.4	49.4	33.3
60°	427.8	396.7	364.5	285.2	200.1	143.7	109.2	59.8	40.2	28.7	21.8
62.5°	146.0	121.9	101.2	72.4	54.0	47.1	41.4	33.3	24.1	19.5	14.9
65°	42.5	41.4	39.1	34.5	27.6	25.3	24.1	19.5	14.9	12.6	10.3
67.5°	20.7	19.5	18.4	17.2	13.8	12.6	12.6	11.5	9.2	8.0	6.9
70°	9.2	9.2	8.0	8.0	6.9	6.9	6.9	5.7	5.7	5.7	5.7
72.5°	4.6	4.6	4.6	3.4	3.4	3.4	3.4	4.6	4.6	5.7	5.7
75°	1.1	2.3	2.3	2.3	2.3	3.4	3.4	4.6	4.6	5.7	5.7
77.5°	1.1	1.1	1.1	2.3	2.3	2.3	3.4	4.6	4.6	5.7	5.7
80°	0.0	1.1	1.1	2.3	2.3	2.3	3.4	3.4	4.6	5.7	5.7
82.5°	0.0	1.1	1.1	2.3	2.3	2.3	3.4	3.4	4.6	5.7	5.7
85°	0.0	0.0	1.1	1.1	2.3	2.3	3.4	3.4	4.6	5.7	5.7
87.5°	0.0	0.0	1.1	1.1	2.3	2.3	3.4	3.4	4.6	5.7	5.7
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°	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0
2.5°	1666.2	1642.1	1546.6	1473.0	1438.5	1436.2	1359.2	1312.1	1229.3	1164.9	1103.9
5°	2190.6	2083.7	1890.5	1737.5	1663.9	1626.0	1474.2	1365.0	1222.4	1112.0	1002.7
7.5°	2724.2	2520.6	2249.2	1958.3	1838.7	1765.1	1530.5	1355.8	1166.0	1011.9	876.2
10°	3270.4	2911.6	2506.8	2122.8	1950.3	1826.1	1524.8	1287.9	1069.4	888.9	740.5
12.5°	3839.6	3273.8	2710.4	2229.7	2002.0	1838.7	1473.0	1189.0	951.0	758.9	617.5
15°	4319.1	3554.4	2839.1	2255.0	1985.9	1788.1	1362.7	1063.7	824.5	637.1	508.3
17.5°	4689.4	3711.9	2863.3	2192.9	1896.2	1675.4	1220.1	925.7	691.1	525.5	397.9
20°	4875.7	3736.1	2787.4	2045.7	1734.1	1506.4	1057.9	785.4	579.6	425.5	316.2
22.5°	4889.5	3623.4	2621.8	1856.0	1555.8	1324.7	924.5	677.3	508.3	381.8	300.1
25°	4710.1	3406.1	2399.9	1661.6	1373.0	1164.9	829.1	649.7	511.7	442.7	407.1
27.5°	4369.7	3104.8	2156.1	1467.3	1215.5	1054.5	790.0	649.7	554.3	500.2	512.9
30°	3898.2	2720.7	1816.9	1202.8	988.9	848.6	621.0	486.4	381.8	318.5	307.0
32.5°	3286.5	2226.2	1408.7	888.9	721.0	611.8	419.7	304.7	246.1	240.3	233.4
35°	2704.6	1758.2	1069.4	656.6	531.3	432.4	267.9	179.4	163.3	154.1	147.2
37.5°	2136.5	1315.5	768.1	477.2	364.5	274.8	138.0	116.1	101.2	92.0	83.9
40°	1606.4	945.2	541.6	288.6	190.9	118.4	82.8	71.3	63.2	58.6	56.3
42.5°	1136.1	629.0	335.8	121.9	90.8	74.7	57.5	50.6	46.0	43.7	41.4
45°	660.1	391.0	135.7	71.3	57.5	51.7	42.5	37.9	35.6	33.3	32.2
47.5°	412.8	157.5	70.1	46.0	40.2	36.8	31.0	29.9	27.6	26.4	26.4
50°	166.7	70.1	43.7	32.2	28.7	27.6	24.1	23.0	20.7	20.7	20.7
52.5°	63.2	41.4	29.9	23.0	20.7	19.5	17.2	17.2	16.1	16.1	16.1
55°	36.8	27.6	20.7	16.1	14.9	14.9	13.8	13.8	12.6	12.6	12.6
57.5°	24.1	18.4	14.9	11.5	11.5	11.5	10.3	10.3	10.3	10.3	10.3
60°	16.1	12.6	10.3	9.2	9.2	9.2	9.2	10.3	10.3	10.3	10.3
62.5°	11.5	10.3	9.2	9.2	9.2	9.2	9.2	10.3	10.3	10.3	11.5
65°	9.2	8.0	8.0	8.0	8.0	9.2	9.2	10.3	10.3	11.5	11.5
67.5°	6.9	6.9	6.9	6.9	8.0	8.0	9.2	10.3	10.3	10.3	11.5
70°	5.7	6.9	6.9	8.0	8.0	8.0	9.2	9.2	10.3	10.3	11.5
72.5°	5.7	6.9	6.9	8.0	8.0	8.0	9.2	10.3	10.3	10.3	11.5
75°	5.7	6.9	6.9	8.0	8.0	8.0	9.2	10.3	10.3	10.3	11.5
77.5°	6.9	6.9	8.0	8.0	8.0	9.2	9.2	10.3	10.3	11.5	11.5
80°	6.9	6.9	8.0	8.0	8.0	9.2	9.2	10.3	10.3	11.5	11.5
82.5°	6.9	6.9	8.0	8.0	8.0	9.2	9.2	10.3	10.3	11.5	11.5
85°	6.9	6.9	8.0	8.0	8.0	9.2	9.2	10.3	10.3	11.5	11.5
87.5°	6.9	6.9	8.0	8.0	8.0	9.2	9.2	10.3	10.3	10.3	11.5
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°	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0
2.5°	1074.0	1021.1	963.6	945.2	926.8	891.2	869.3	830.2	801.5	772.7	749.7
5°	930.3	846.3	776.2	746.3	717.5	668.1	633.6	592.2	558.9	530.1	503.7
7.5°	780.8	684.2	614.1	584.2	555.4	501.4	457.7	405.9	366.8	334.6	308.2
10°	642.8	550.8	474.9	439.3	405.9	349.6	308.2	266.8	233.4	205.8	181.7
12.5°	523.2	424.3	347.3	320.8	288.6	242.6	203.5	158.7	139.1	131.1	125.3
15°	405.9	317.4	253.0	228.8	200.1	156.4	139.1	131.1	125.3	121.9	117.3
17.5°	309.3	235.7	172.5	156.4	147.2	138.0	133.4	127.6	124.2	123.0	119.6
20°	242.6	178.2	162.1	157.5	157.5	155.2	151.8	151.8	150.6	154.1	154.1
22.5°	249.5	249.5	263.3	262.2	280.6	299.0	312.8	357.6	382.9	437.0	473.8
25°	435.8	477.2	525.5	540.5	576.1	629.0	684.2	753.2	801.5	853.2	873.9
27.5°	543.9	550.8	543.9	561.2	538.2	524.4	529.0	537.0	537.0	540.5	554.3
30°	322.0	338.1	353.0	364.5	358.8	353.0	350.7	333.5	333.5	326.6	320.8
32.5°	218.5	216.2	213.9	218.5	213.9	213.9	210.4	211.6	204.7	200.1	197.8
35°	149.5	142.6	134.5	135.7	131.1	129.9	126.5	126.5	121.9	119.6	118.4
37.5°	82.8	82.8	79.3	80.5	79.3	79.3	79.3	80.5	79.3	79.3	80.5
40°	56.3	56.3	55.2	56.3	55.2	56.3	57.5	57.5	57.5	57.5	56.3
42.5°	42.5	42.5	41.4	42.5	41.4	42.5	43.7	43.7	43.7	43.7	43.7
45°	33.3	33.3	33.3	33.3	33.3	33.3	33.3	34.5	34.5	33.3	33.3
47.5°	26.4	27.6	26.4	26.4	26.4	26.4	27.6	27.6	26.4	26.4	26.4
50°	21.8	21.8	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7
52.5°	17.2	16.1	16.1	14.9	14.9	14.9	14.9	14.9	14.9	14.9	13.8
55°	12.6	12.6	11.5	11.5	11.5	12.6	12.6	12.6	12.6	11.5	11.5
57.5°	11.5	11.5	11.5	10.3	10.3	11.5	11.5	10.3	10.3	10.3	9.2
60°	10.3	11.5	10.3	10.3	10.3	10.3	10.3	9.2	9.2	9.2	8.0
62.5°	11.5	11.5	10.3	10.3	10.3	10.3	9.2	9.2	9.2	8.0	8.0
65°	11.5	11.5	11.5	10.3	10.3	10.3	10.3	9.2	9.2	8.0	8.0
67.5°	11.5	11.5	11.5	11.5	10.3	10.3	10.3	9.2	9.2	9.2	8.0
70°	11.5	11.5	11.5	11.5	11.5	10.3	10.3	10.3	9.2	9.2	8.0
72.5°	11.5	11.5	11.5	10.3	10.3	10.3	10.3	10.3	9.2	9.2	8.0
75°	11.5	11.5	11.5	10.3	10.3	10.3	10.3	9.2	9.2	9.2	8.0
77.5°	11.5	11.5	11.5	10.3	10.3	10.3	10.3	9.2	9.2	9.2	8.0
80°	11.5	11.5	11.5	10.3	10.3	10.3	10.3	9.2	9.2	9.2	8.0
82.5°	11.5	11.5	11.5	10.3	10.3	10.3	10.3	9.2	9.2	8.0	8.0
85°	11.5	11.5	10.3	10.3	10.3	10.3	9.2	9.2	8.0	8.0	6.9
87.5°	10.3	10.3	10.3	10.3	9.2	9.2	9.2	8.0	6.9	6.9	5.7
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: P179949

CATALOG NUMBER: LDA6A65830D010TE LARH40FL 6LAL1LI 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0	1204.0
2.5°	722.1	717.5	714.1	721.0	718.7	690.0	693.4	692.3
5°	473.8	463.4	455.4	458.8	449.6	437.0	427.8	425.5
7.5°	281.7	270.2	263.3	256.4	254.1	238.0	231.1	235.7
10°	155.2	139.1	138.0	134.5	129.9	126.5	124.2	125.3
12.5°	119.6	118.4	116.1	115.0	112.7	111.5	110.4	109.2
15°	113.8	112.7	111.5	110.4	109.2	108.1	106.9	106.9
17.5°	117.3	117.3	116.1	115.0	115.0	116.1	115.0	113.8
20°	152.9	152.9	155.2	158.7	158.7	162.1	166.7	163.3
22.5°	496.8	522.1	553.1	562.3	616.4	660.1	740.5	704.9
25°	908.4	965.9	979.7	999.3	1029.2	1044.1	1029.2	1048.7
27.5°	552.0	571.5	573.8	575.0	581.9	580.7	565.8	575.0
30°	320.8	327.7	325.4	324.3	322.0	309.3	307.0	311.6
32.5°	201.2	198.9	197.8	196.6	196.6	189.7	193.2	190.9
35°	115.0	118.4	117.3	116.1	112.7	111.5	111.5	110.4
37.5°	77.0	78.2	77.0	75.9	73.6	72.4	71.3	70.1
40°	55.2	56.3	55.2	54.0	52.9	51.7	50.6	49.4
42.5°	41.4	42.5	41.4	41.4	39.1	37.9	36.8	35.6
45°	32.2	31.0	31.0	31.0	29.9	28.7	27.6	27.6
47.5°	26.4	26.4	26.4	25.3	24.1	24.1	24.1	23.0
50°	19.5	20.7	19.5	19.5	18.4	17.2	17.2	16.1
52.5°	13.8	13.8	12.6	12.6	11.5	10.3	10.3	10.3
55°	10.3	10.3	10.3	9.2	9.2	8.0	8.0	8.0
57.5°	9.2	8.0	8.0	8.0	6.9	6.9	5.7	5.7
60°	8.0	6.9	6.9	5.7	5.7	4.6	4.6	4.6
62.5°	6.9	5.7	5.7	5.7	4.6	4.6	4.6	4.6
65°	6.9	5.7	5.7	5.7	4.6	4.6	4.6	4.6
67.5°	6.9	6.9	5.7	5.7	5.7	4.6	4.6	4.6
70°	6.9	6.9	6.9	5.7	5.7	5.7	4.6	4.6
72.5°	8.0	6.9	6.9	6.9	5.7	5.7	5.7	5.7
75°	8.0	6.9	6.9	6.9	5.7	5.7	5.7	5.7
77.5°	8.0	6.9	6.9	6.9	5.7	5.7	5.7	5.7
80°	6.9	6.9	6.9	5.7	5.7	5.7	5.7	5.7
82.5°	6.9	6.9	6.9	6.9	5.7	5.7	5.7	5.7
85°	6.9	5.7	5.7	5.7	4.6	4.6	4.6	4.6
87.5°	5.7	4.6	4.6	3.4	3.4	3.4	2.3	2.3
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)