

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: P179948

Luminaire Tested: **LDA6A65827D010TE LARH40FL 6LAL1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179948  
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: LDA6A65827D010TE LARH40FL 6LAL1LI 30°  
Description: PORTFOLIO 6" Lensed Adjustable, Self-flanged, 40° Flood, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6035.0 lumens  
Efficiency: N/A  
Efficacy: 77.4 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

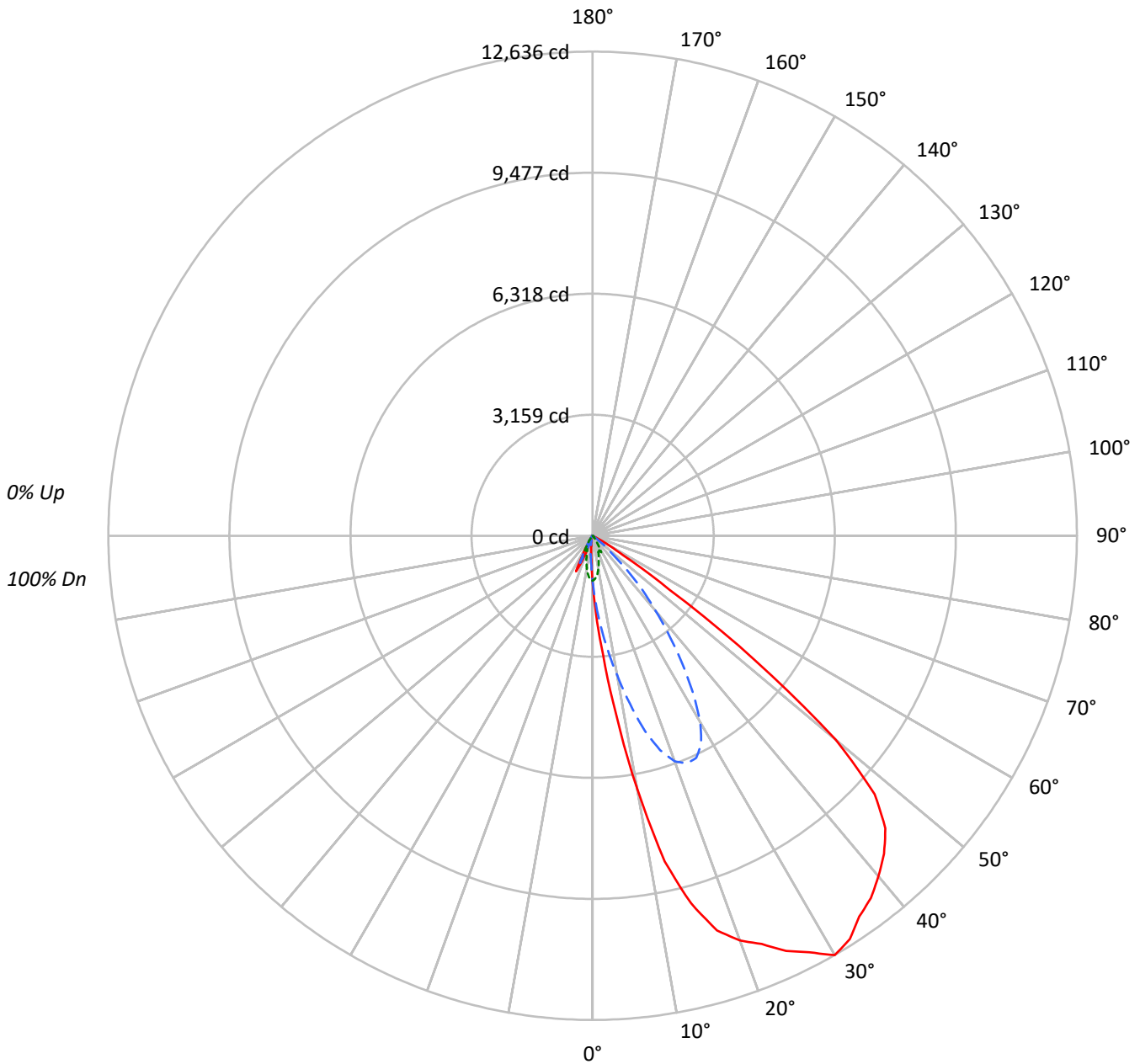
Input Watts (W): 78  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	64447	64447	64447
5°	171037	59751	22865
10°	373345	48318	6814
15°	563545	35307	5925
20°	655525	24240	9299
25°	722939	26149	61945
30°	799851	19687	19262
35°	811730	10072	7214
40°	830399	4101	3456
45°	837366	2527	2085
50°	705401	1723	1339
55°	232995	1185	755
60°	45797	1107	493
65°	5383	1453	584
70°	1443	1619	721
75°	233	2139	1186
80°	0	3536	1768
85°	0	7045	2830



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	156.4	2.6
10°-20°	790.0	13.1
20°-30°	1559.4	25.8
30°-40°	1758.9	29.1
40°-50°	1396.4	23.1
50°-60°	341.4	5.7
60°-70°	18.2	0.3
70°-80°	7.8	0.1
80°-90°	6.4	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°	2505.9	41.5
0°-40°	4264.8	70.7
0°-60°	6002.6	99.5
0°-90°	6035.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6035.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1176	1176	1176	1176	1176	
5°	3108	2329	1086	546	416	411
15°	9930	5278	622	122	104	2785
25°	11952	6397	432	783	1024	5536
35°	12129	4072	150	119	108	7628
45°	10801	1269	33	34	27	8095
55°	2438	55	12	12	8	2860
65°	42	10	11	9	4	101
75°	1	6	10	9	6	3
85°	0	6	11	8	4	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°	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6
2.5°	2040.3	2001.0	2018.9	1990.9	1911.1	1886.4	1906.6	1876.3	1785.4	1750.6	1714.6
5°	3108.1	3073.3	3084.5	3020.5	2871.2	2819.5	2816.2	2724.1	2539.9	2436.6	2328.8
7.5°	4712.7	4664.4	4650.9	4497.1	4209.7	4101.9	4049.1	3822.3	3475.3	3229.4	2988.0
10°	6706.9	6754.1	6705.8	6456.5	6005.1	5803.0	5675.0	5246.1	4620.6	4152.4	3701.0
12.5°	8706.8	8736.0	8645.0	8335.1	7761.3	7518.8	7330.1	6781.0	5956.9	5161.9	4488.1
15°	9929.6	10067.7	9982.4	9765.6	9321.0	9026.8	8857.2	8179.0	7141.5	6267.9	5277.5
17.5°	10800.9	10928.9	10858.2	10680.8	10178.9	9941.9	9831.9	9273.8	8144.2	7033.7	5868.1
20°	11236.6	11392.7	11328.7	11127.7	10759.4	10561.8	10428.1	9883.5	8865.1	7603.0	6262.3
22.5°	11531.9	11704.8	11635.2	11452.2	11077.2	10847.0	10784.1	10268.7	9242.4	7944.3	6429.6
25°	11951.9	12096.7	11900.2	11674.5	11304.0	11061.4	11023.3	10496.6	9423.2	8073.5	6397.0
27.5°	12252.8	12424.6	12091.1	11862.0	11438.7	11183.8	11134.4	10639.2	9440.0	7971.3	6133.1
30°	12635.7	12524.5	12231.5	11899.1	11447.7	11176.0	11113.1	10556.1	9271.6	7595.1	5616.6
32.5°	12484.1	12457.2	12164.1	11773.3	11352.3	11078.3	10994.1	10300.1	8809.0	6946.1	4885.6
35°	12129.3	12214.6	11969.8	11727.3	11204.0	10918.8	10802.1	9922.8	8111.6	6110.7	4071.5
37.5°	11921.6	11975.5	11820.5	11524.1	11005.3	10630.3	10409.0	9288.4	7198.8	5057.4	3286.7
40°	11603.8	11740.8	11591.4	11251.2	10652.7	10138.4	9753.3	8142.0	5996.2	3987.3	2570.3
42.5°	11255.7	11378.1	11235.5	10827.9	9982.4	9292.9	8652.9	6794.5	4694.7	3046.4	1928.0
45°	10800.9	10911.0	10655.0	10020.5	8823.6	7872.5	7233.6	5335.9	3540.4	2237.9	1268.8
47.5°	9981.2	9952.0	9589.4	8603.5	7129.1	6276.9	5533.5	3822.3	2353.5	1267.7	631.1
50°	8271.1	7998.2	7464.9	6320.7	4784.6	3863.8	3356.3	1972.9	1067.9	614.2	396.4
52.5°	5357.2	5052.9	4564.5	3507.9	2297.4	1843.8	1478.8	891.6	556.9	347.0	156.1
55°	2437.8	2222.2	1910.0	1417.1	985.9	819.7	693.9	451.4	298.7	129.1	55.0
57.5°	928.6	856.8	761.3	607.5	455.9	394.1	326.8	216.7	93.2	48.3	32.6
60°	417.7	387.4	356.0	278.5	195.4	140.4	106.7	58.4	39.3	28.1	21.3
62.5°	142.6	119.0	98.8	70.7	52.8	46.0	40.4	32.6	23.6	19.1	14.6
65°	41.5	40.4	38.2	33.7	26.9	24.7	23.6	19.1	14.6	12.4	10.1
67.5°	20.2	19.1	18.0	16.8	13.5	12.4	12.4	11.2	9.0	7.9	6.7
70°	9.0	9.0	7.9	7.9	6.7	6.7	6.7	5.6	5.6	5.6	5.6
72.5°	4.5	4.5	4.5	3.4	3.4	3.4	3.4	4.5	4.5	5.6	5.6
75°	1.1	2.2	2.2	2.2	2.2	3.4	3.4	4.5	4.5	5.6	5.6
77.5°	1.1	1.1	1.1	2.2	2.2	2.2	3.4	4.5	4.5	5.6	5.6
80°	0.0	1.1	1.1	2.2	2.2	2.2	3.4	3.4	4.5	5.6	5.6
82.5°	0.0	1.1	1.1	2.2	2.2	2.2	3.4	3.4	4.5	5.6	5.6
85°	0.0	0.0	1.1	1.1	2.2	2.2	3.4	3.4	4.5	5.6	5.6
87.5°	0.0	0.0	1.1	1.1	2.2	2.2	3.4	3.4	4.5	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



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6
2.5°	1627.0	1603.5	1510.3	1438.4	1404.7	1402.5	1327.2	1281.2	1200.4	1137.5	1078.0
5°	2139.1	2034.6	1846.0	1696.7	1624.8	1587.7	1439.5	1332.9	1193.6	1085.8	979.1
7.5°	2660.1	2461.3	2196.3	1912.3	1795.5	1723.6	1494.5	1323.9	1138.6	988.1	855.6
10°	3193.5	2843.1	2447.9	2072.8	1904.4	1783.1	1488.9	1257.6	1044.3	868.0	723.1
12.5°	3749.3	3196.8	2646.6	2177.3	1954.9	1795.5	1438.4	1161.1	928.6	741.1	603.0
15°	4217.5	3470.8	2772.4	2202.0	1939.2	1746.1	1330.6	1038.7	805.1	622.1	496.3
17.5°	4579.1	3624.6	2796.0	2141.3	1851.6	1636.0	1191.4	903.9	674.8	513.2	388.5
20°	4761.0	3648.2	2721.8	1997.6	1693.3	1471.0	1033.0	766.9	565.9	415.5	308.8
22.5°	4774.5	3538.2	2560.2	1812.3	1519.2	1293.6	902.8	661.4	496.3	372.8	293.1
25°	4599.3	3326.0	2343.4	1622.6	1340.7	1137.5	809.6	634.4	499.7	432.3	397.5
27.5°	4266.9	3031.8	2105.4	1432.8	1186.9	1029.7	771.4	634.4	541.2	488.5	500.8
30°	3806.5	2656.7	1774.1	1174.5	965.7	828.7	606.4	475.0	372.8	311.0	299.8
32.5°	3209.2	2173.9	1375.5	868.0	704.0	597.4	409.8	297.6	240.3	234.7	227.9
35°	2641.0	1716.9	1044.3	641.2	518.8	422.2	261.6	175.2	159.4	150.5	143.7
37.5°	2086.3	1284.6	750.1	466.0	356.0	268.4	134.7	113.4	98.8	89.8	82.0
40°	1568.7	923.0	528.9	281.8	186.4	115.7	80.8	69.6	61.8	57.3	55.0
42.5°	1109.4	614.2	327.9	119.0	88.7	73.0	56.1	49.4	44.9	42.7	40.4
45°	644.5	381.8	132.5	69.6	56.1	50.5	41.5	37.1	34.8	32.6	31.4
47.5°	403.1	153.8	68.5	44.9	39.3	35.9	30.3	29.2	26.9	25.8	25.8
50°	162.8	68.5	42.7	31.4	28.1	26.9	23.6	22.5	20.2	20.2	20.2
52.5°	61.8	40.4	29.2	22.5	20.2	19.1	16.8	16.8	15.7	15.7	15.7
55°	35.9	26.9	20.2	15.7	14.6	14.6	13.5	13.5	12.4	12.4	12.4
57.5°	23.6	18.0	14.6	11.2	11.2	11.2	10.1	10.1	10.1	10.1	10.1
60°	15.7	12.4	10.1	9.0	9.0	9.0	9.0	10.1	10.1	10.1	10.1
62.5°	11.2	10.1	9.0	9.0	9.0	9.0	9.0	10.1	10.1	10.1	11.2
65°	9.0	7.9	7.9	7.9	7.9	9.0	9.0	10.1	10.1	11.2	11.2
67.5°	6.7	6.7	6.7	6.7	7.9	7.9	9.0	10.1	10.1	10.1	11.2
70°	5.6	6.7	6.7	7.9	7.9	7.9	9.0	9.0	10.1	10.1	11.2
72.5°	5.6	6.7	6.7	7.9	7.9	7.9	9.0	10.1	10.1	10.1	11.2
75°	5.6	6.7	6.7	7.9	7.9	7.9	9.0	10.1	10.1	10.1	11.2
77.5°	6.7	6.7	7.9	7.9	7.9	9.0	9.0	10.1	10.1	11.2	11.2
80°	6.7	6.7	7.9	7.9	7.9	9.0	9.0	10.1	10.1	11.2	11.2
82.5°	6.7	6.7	7.9	7.9	7.9	9.0	9.0	10.1	10.1	11.2	11.2
85°	6.7	6.7	7.9	7.9	7.9	9.0	9.0	10.1	10.1	11.2	11.2
87.5°	6.7	6.7	7.9	7.9	7.9	9.0	9.0	10.1	10.1	10.1	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



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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6
2.5°	1048.8	997.1	941.0	923.0	905.0	870.2	848.9	810.7	782.6	754.6	732.1
5°	908.4	826.4	757.9	728.7	700.7	652.4	618.7	578.3	545.7	517.6	491.8
7.5°	762.4	668.1	599.6	570.4	542.3	489.6	446.9	396.4	358.2	326.8	300.9
10°	627.7	537.9	463.7	428.9	396.4	341.4	300.9	260.5	227.9	201.0	177.4
12.5°	510.9	414.3	339.1	313.3	281.8	236.9	198.7	155.0	135.9	128.0	122.4
15°	396.4	309.9	247.0	223.5	195.4	152.7	135.9	128.0	122.4	119.0	114.5
17.5°	302.1	230.2	168.4	152.7	143.7	134.7	130.3	124.6	121.3	120.1	116.8
20°	236.9	174.0	158.3	153.8	153.8	151.6	148.2	148.2	147.1	150.5	150.5
22.5°	243.7	243.7	257.1	256.0	274.0	291.9	305.4	349.2	373.9	426.7	462.6
25°	425.6	466.0	513.2	527.8	562.6	614.2	668.1	735.5	782.6	833.2	853.4
27.5°	531.1	537.9	531.1	548.0	525.5	512.0	516.5	524.4	524.4	527.8	541.2
30°	314.4	330.1	344.7	356.0	350.3	344.7	342.5	325.6	325.6	318.9	313.3
32.5°	213.3	211.1	208.9	213.3	208.9	208.9	205.5	206.6	199.9	195.4	193.1
35°	146.0	139.2	131.4	132.5	128.0	126.9	123.5	123.5	119.0	116.8	115.7
37.5°	80.8	80.8	77.5	78.6	77.5	77.5	77.5	78.6	77.5	77.5	78.6
40°	55.0	55.0	53.9	55.0	53.9	55.0	56.1	56.1	56.1	56.1	55.0
42.5°	41.5	41.5	40.4	41.5	40.4	41.5	42.7	42.7	42.7	42.7	42.7
45°	32.6	32.6	32.6	32.6	32.6	32.6	32.6	33.7	33.7	32.6	32.6
47.5°	25.8	26.9	25.8	25.8	25.8	25.8	26.9	26.9	25.8	25.8	25.8
50°	21.3	21.3	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2
52.5°	16.8	15.7	15.7	14.6	14.6	14.6	14.6	14.6	14.6	14.6	13.5
55°	12.4	12.4	11.2	11.2	11.2	12.4	12.4	12.4	12.4	11.2	11.2
57.5°	11.2	11.2	11.2	10.1	10.1	11.2	11.2	10.1	10.1	10.1	9.0
60°	10.1	11.2	10.1	10.1	10.1	10.1	10.1	9.0	9.0	9.0	7.9
62.5°	11.2	11.2	10.1	10.1	10.1	10.1	9.0	9.0	9.0	7.9	7.9
65°	11.2	11.2	11.2	10.1	10.1	10.1	10.1	9.0	9.0	7.9	7.9
67.5°	11.2	11.2	11.2	11.2	10.1	10.1	10.1	9.0	9.0	9.0	7.9
70°	11.2	11.2	11.2	11.2	11.2	10.1	10.1	10.1	9.0	9.0	7.9
72.5°	11.2	11.2	11.2	10.1	10.1	10.1	10.1	10.1	9.0	9.0	7.9
75°	11.2	11.2	11.2	10.1	10.1	10.1	10.1	9.0	9.0	9.0	7.9
77.5°	11.2	11.2	11.2	10.1	10.1	10.1	10.1	9.0	9.0	9.0	7.9
80°	11.2	11.2	11.2	10.1	10.1	10.1	10.1	9.0	9.0	9.0	7.9
82.5°	11.2	11.2	11.2	10.1	10.1	10.1	10.1	9.0	9.0	7.9	7.9
85°	11.2	11.2	10.1	10.1	10.1	10.1	9.0	9.0	7.9	7.9	6.7
87.5°	10.1	10.1	10.1	10.1	9.0	9.0	9.0	7.9	6.7	6.7	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: P179948

CATALOG NUMBER: LDA6A65827D010TE LARH40FL 6LAL1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6	1175.6
2.5°	705.2	700.7	697.3	704.0	701.8	673.7	677.1	676.0
5°	462.6	452.5	444.7	448.0	439.0	426.7	417.7	415.5
7.5°	275.1	263.9	257.1	250.4	248.2	232.4	225.7	230.2
10°	151.6	135.9	134.7	131.4	126.9	123.5	121.3	122.4
12.5°	116.8	115.7	113.4	112.3	110.0	108.9	107.8	106.7
15°	111.2	110.0	108.9	107.8	106.7	105.6	104.4	104.4
17.5°	114.5	114.5	113.4	112.3	112.3	113.4	112.3	111.2
20°	149.3	149.3	151.6	155.0	155.0	158.3	162.8	159.4
22.5°	485.1	509.8	540.1	549.1	601.9	644.5	723.1	688.3
25°	887.1	943.2	956.7	975.8	1005.0	1019.6	1005.0	1024.1
27.5°	539.0	558.1	560.3	561.4	568.2	567.1	552.5	561.4
30°	313.3	320.0	317.8	316.7	314.4	302.1	299.8	304.3
32.5°	196.5	194.3	193.1	192.0	192.0	185.3	188.6	186.4
35°	112.3	115.7	114.5	113.4	110.0	108.9	108.9	107.8
37.5°	75.2	76.4	75.2	74.1	71.9	70.7	69.6	68.5
40°	53.9	55.0	53.9	52.8	51.7	50.5	49.4	48.3
42.5°	40.4	41.5	40.4	40.4	38.2	37.1	35.9	34.8
45°	31.4	30.3	30.3	30.3	29.2	28.1	26.9	26.9
47.5°	25.8	25.8	25.8	24.7	23.6	23.6	23.6	22.5
50°	19.1	20.2	19.1	19.1	18.0	16.8	16.8	15.7
52.5°	13.5	13.5	12.4	12.4	11.2	10.1	10.1	10.1
55°	10.1	10.1	10.1	9.0	9.0	7.9	7.9	7.9
57.5°	9.0	7.9	7.9	7.9	6.7	6.7	5.6	5.6
60°	7.9	6.7	6.7	5.6	5.6	4.5	4.5	4.5
62.5°	6.7	5.6	5.6	5.6	4.5	4.5	4.5	4.5
65°	6.7	5.6	5.6	5.6	4.5	4.5	4.5	4.5
67.5°	6.7	6.7	5.6	5.6	5.6	4.5	4.5	4.5
70°	6.7	6.7	6.7	5.6	5.6	5.6	4.5	4.5
72.5°	7.9	6.7	6.7	6.7	5.6	5.6	5.6	5.6
75°	7.9	6.7	6.7	6.7	5.6	5.6	5.6	5.6
77.5°	7.9	6.7	6.7	6.7	5.6	5.6	5.6	5.6
80°	6.7	6.7	6.7	5.6	5.6	5.6	5.6	5.6
82.5°	6.7	6.7	6.7	6.7	5.6	5.6	5.6	5.6
85°	6.7	5.6	5.6	5.6	4.5	4.5	4.5	4.5
87.5°	5.6	4.5	4.5	3.4	3.4	3.4	2.2	2.2
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)