

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: P179637

Luminaire Tested: **LDA6A45830D010TE LARH20SP 6LA1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179637  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26670)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDA6A45830D010TE LARH20SP 6LA1LI 30°  
Description: PORTFOLIO 6" Adjustable Reflector, Angle-cut Trim, Self-flanged, 20° Spot, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4360.4 lumens  
Efficiency: N/A  
Efficacy: 82.3 lumens/watt  
Spacing Criteria (0/90/45): 2.28 / 0.6 / 1.28  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

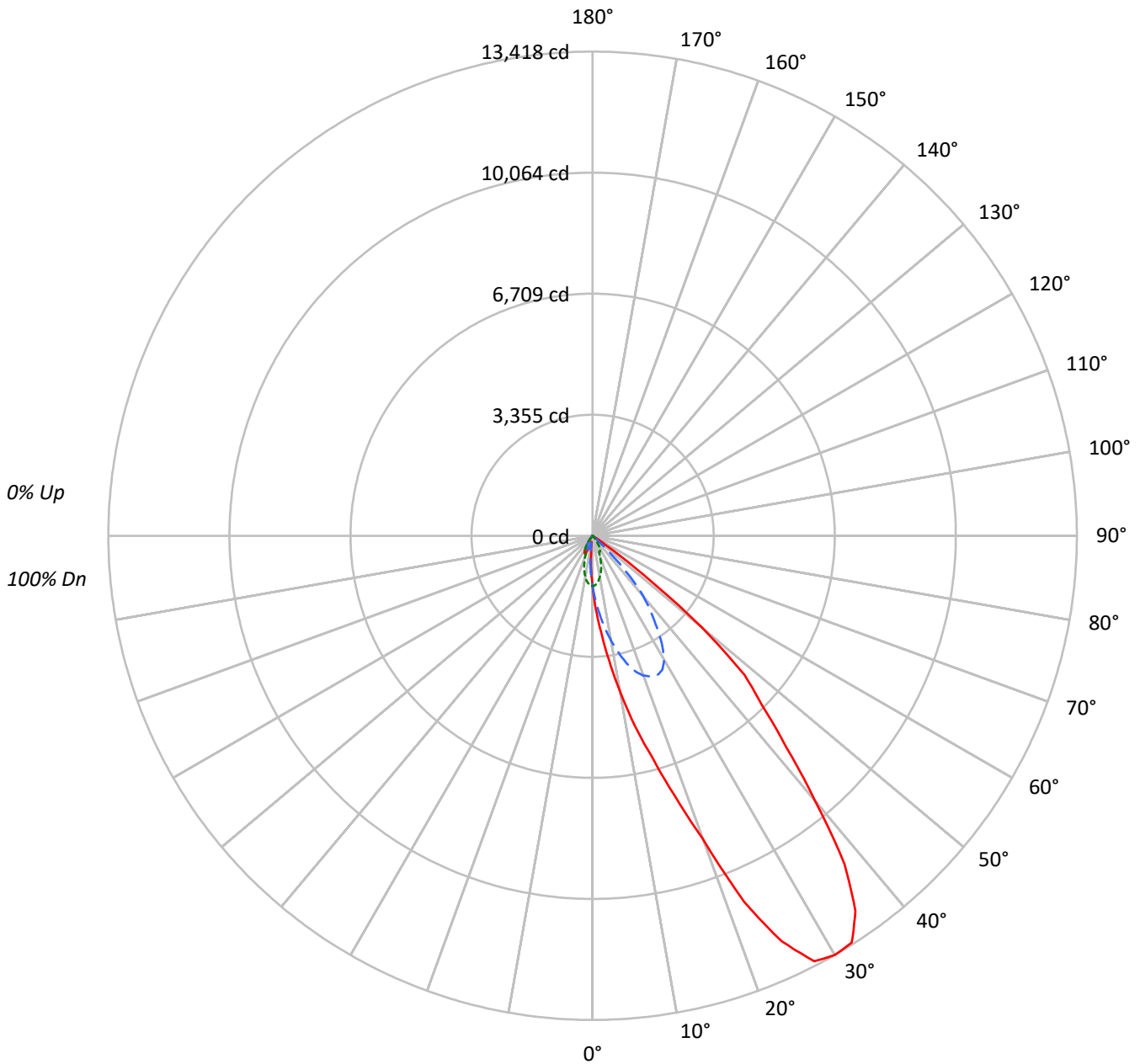
Input Watts (W): 53  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	113	109	106	104	110	107	105	102	103	101	99	99	98	96	96	95	93	91																			
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	87	84	83																			
3	99	91	85	81	97	90	84	80	87	83	79	85	81	77	82	79	76	75																			
4	92	83	77	72	91	82	76	71	80	75	71	78	73	70	76	72	69	67																			
5	86	76	69	64	85	75	69	64	74	68	63	72	67	63	70	66	62	61																			
6	81	70	63	58	79	69	62	58	68	62	57	66	61	57	65	60	56	55																			
7	76	64	57	52	74	64	57	52	62	56	52	61	55	51	60	55	51	49																			
8	71	59	52	47	69	59	52	47	57	51	47	56	51	47	55	50	46	45																			
9	66	55	48	43	65	54	47	43	53	47	43	52	47	43	51	46	42	41																			
10	62	51	44	39	61	50	44	39	49	43	39	48	43	39	48	42	39	37																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	76502	76502	76502
5°	147232	73288	27449
10°	243527	64316	9875
15°	359525	51896	15738
20°	522047	33049	26643
25°	749934	28871	32306
30°	849397	24998	23510
35°	849468	12983	12066
40°	686107	4838	5052
45°	513767	1675	1822
50°	336330	665	588
55°	39530	564	96
60°	1184	647	0
65°	259	765	0
70°	160	946	0
75°	0	1461	0
80°	0	2178	316
85°	0	4340	629



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	144.0	3.3
10°-20°	583.4	13.4
20°-30°	1280.0	29.4
30°-40°	1421.0	32.6
40°-50°	822.6	18.9
50°-60°	97.8	2.2
60°-70°	3.8	0.1
70°-80°	4.1	0.1
80°-90°	3.8	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°	2007.4	46.0
0°-40°	3428.4	78.6
0°-60°	4348.7	99.7
0°-90°	4360.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4360.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1396	1396	1396	1396	1396	
5°	2676	2163	1332	762	499	308
15°	6335	3664	914	248	277	1902
25°	12398	4255	477	531	534	5600
35°	12693	3104	194	191	180	7652
45°	6627	731	22	26	24	5179
55°	414	6	6	4	1	910
65°	2	4	6	4	0	3
75°	0	4	7	4	0	0
85°	0	4	7	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°	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5
2.5°	2029.6	1989.4	1949.3	1946.3	1913.0	1868.9	1899.3	1834.6	1854.2	1805.2	1774.8
5°	2675.5	2631.4	2572.6	2555.9	2499.1	2433.4	2457.9	2344.2	2332.4	2238.4	2162.9
7.5°	3467.3	3416.4	3324.2	3280.1	3186.0	3088.0	3099.8	2917.5	2862.6	2707.8	2569.6
10°	4374.8	4338.5	4206.2	4115.1	3967.1	3824.0	3799.5	3530.0	3410.5	3167.4	2949.9
12.5°	5393.1	5339.1	5155.9	5017.7	4815.8	4634.5	4580.6	4194.5	3979.9	3628.0	3319.3
15°	6334.8	6298.6	6140.8	5933.0	5677.3	5443.0	5350.9	4900.1	4561.0	4093.5	3664.3
17.5°	7542.2	7442.3	7158.1	6750.4	6384.8	6151.6	6039.9	5475.4	5059.8	4489.5	3941.6
20°	8948.6	8813.3	8378.2	7813.7	7207.1	6797.4	6551.4	5943.8	5429.3	4766.8	4122.0
22.5°	10984.1	10708.7	9882.5	8871.1	8027.3	7480.5	7128.7	6245.7	5698.8	4940.3	4221.9
25°	12398.2	12156.2	11401.6	10071.7	8719.2	8090.1	7595.2	6495.6	5875.2	5043.2	4255.2
27.5°	13294.0	13165.6	12297.3	10968.4	9254.3	8436.0	7876.4	6653.4	5941.9	5040.2	4187.6
30°	13418.4	13426.3	12620.7	11208.5	9296.5	8444.8	7815.7	6585.7	5803.7	4850.1	3965.2
32.5°	13364.5	13257.7	12264.0	10753.8	8830.0	8082.2	7484.4	6300.5	5470.5	4467.9	3579.0
35°	12693.2	12455.1	11404.5	9738.5	8150.8	7439.3	6881.7	5843.9	4940.3	3961.2	3103.7
37.5°	11462.3	11085.0	9911.9	8492.9	7317.8	6690.6	6269.2	5259.8	4391.5	3434.0	2631.4
40°	9587.5	9181.8	8354.7	7363.9	6437.8	6007.5	5602.8	4618.8	3773.1	2895.0	2174.7
42.5°	7932.3	7709.8	7092.4	6333.9	5717.4	5274.5	4888.3	3951.4	3181.1	2370.7	1540.6
45°	6626.9	6476.0	6086.9	5530.3	4918.7	4515.0	4163.1	3207.6	2324.6	1505.3	731.1
47.5°	5706.7	5539.1	5098.1	4512.0	3793.7	3354.6	2958.7	2000.2	1269.1	582.1	170.5
50°	3943.6	3745.6	3276.2	2711.7	2097.2	1767.0	1490.6	808.5	333.2	100.9	19.6
52.5°	1784.6	1647.4	1353.4	1037.8	686.0	509.6	332.2	140.1	35.3	14.7	10.8
55°	413.6	362.6	275.4	169.5	84.3	55.9	37.2	14.7	10.8	7.8	5.9
57.5°	26.5	23.5	20.6	16.7	13.7	11.8	10.8	7.8	5.9	4.9	3.9
60°	10.8	10.8	9.8	7.8	6.9	5.9	5.9	3.9	3.9	3.9	3.9
62.5°	4.9	4.9	4.9	3.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9
65°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.9	2.9	3.9
67.5°	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.9	2.9	3.9
70°	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.9	3.9	3.9
72.5°	0.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.9	3.9	3.9
75°	0.0	0.0	1.0	1.0	1.0	2.0	2.0	2.0	2.9	3.9	3.9
77.5°	0.0	0.0	1.0	1.0	2.0	2.0	2.0	2.0	2.9	3.9	3.9
80°	0.0	0.0	1.0	1.0	1.0	2.0	2.0	2.0	2.9	3.9	3.9
82.5°	0.0	0.0	1.0	1.0	1.0	2.0	2.0	2.0	2.9	3.9	3.9
85°	0.0	0.0	1.0	1.0	1.0	2.0	2.0	2.0	2.9	3.9	3.9
87.5°	0.0	0.0	1.0	1.0	1.0	2.0	2.0	2.0	2.9	3.9	3.9
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°	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5
2.5°	1729.7	1687.6	1643.5	1598.4	1577.8	1544.5	1491.6	1454.3	1421.0	1376.9	1321.1
5°	2071.8	1977.7	1878.7	1786.6	1741.5	1682.7	1579.8	1496.5	1419.1	1331.8	1245.6
7.5°	2412.8	2250.1	2093.3	1943.4	1870.9	1786.6	1627.8	1499.4	1377.9	1257.4	1139.8
10°	2715.6	2480.4	2256.0	2047.3	1949.3	1836.6	1628.8	1457.3	1304.4	1155.4	1013.3
12.5°	2997.9	2679.4	2386.3	2115.9	1987.5	1852.2	1600.4	1396.5	1213.3	1039.8	874.2
15°	3246.8	2845.0	2478.5	2148.2	1998.3	1836.6	1548.4	1315.2	1110.4	914.4	701.7
17.5°	3424.2	2940.1	2511.8	2129.6	1961.0	1781.7	1464.2	1214.2	992.8	751.7	497.9
20°	3518.3	2969.5	2490.2	2070.8	1889.5	1695.4	1365.2	1107.4	853.6	566.5	406.7
22.5°	3551.6	2951.8	2430.4	1987.5	1796.4	1599.4	1264.2	995.7	693.9	480.2	416.5
25°	3535.9	2898.9	2353.0	1889.5	1698.4	1500.4	1166.2	852.6	561.6	477.3	443.9
27.5°	3431.1	2780.3	2208.0	1742.5	1550.4	1354.4	995.7	629.2	496.9	447.9	456.7
30°	3199.8	2539.2	1960.0	1502.4	1321.1	1114.3	677.2	462.6	390.0	394.9	394.9
32.5°	2827.4	2178.6	1614.1	1193.7	959.4	694.8	386.1	290.1	295.0	294.0	290.1
35°	2370.7	1779.7	1238.7	733.1	470.4	319.5	195.0	189.1	195.0	194.0	191.1
37.5°	1951.2	1364.2	767.4	294.0	189.1	138.2	115.6	115.6	117.6	117.6	116.6
40°	1472.0	801.7	268.5	97.0	67.6	64.7	65.7	65.7	66.6	67.6	68.6
42.5°	824.2	264.6	70.6	38.2	38.2	36.3	36.3	36.3	38.2	38.2	39.2
45°	222.5	56.8	23.5	22.5	21.6	20.6	20.6	20.6	21.6	21.6	22.5
47.5°	33.3	16.7	13.7	12.7	12.7	11.8	11.8	11.8	12.7	12.7	12.7
50°	12.7	9.8	8.8	7.8	7.8	7.8	6.9	6.9	7.8	7.8	7.8
52.5°	7.8	6.9	5.9	4.9	5.9	4.9	4.9	4.9	5.9	5.9	5.9
55°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	5.9	5.9
57.5°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	5.9	5.9
60°	3.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	5.9	5.9	5.9
62.5°	3.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	5.9	5.9	5.9
65°	3.9	4.9	4.9	4.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
67.5°	3.9	4.9	4.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
70°	4.9	4.9	4.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
72.5°	4.9	4.9	4.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.9
75°	4.9	4.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	6.9	6.9
77.5°	4.9	4.9	5.9	5.9	5.9	5.9	5.9	5.9	6.9	6.9	6.9
80°	4.9	4.9	5.9	5.9	5.9	5.9	5.9	5.9	6.9	6.9	6.9
82.5°	4.9	4.9	5.9	5.9	5.9	6.9	5.9	6.9	6.9	6.9	6.9
85°	4.9	4.9	5.9	5.9	5.9	5.9	5.9	6.9	6.9	6.9	6.9
87.5°	4.9	4.9	5.9	5.9	5.9	6.9	5.9	5.9	6.9	6.9	6.9
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°	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5
2.5°	1281.9	1259.3	1218.2	1189.7	1178.0	1154.5	1110.4	1105.5	1052.5	1025.1	996.7
5°	1172.1	1116.2	1046.7	1002.6	977.1	927.1	858.5	827.1	762.5	720.3	658.6
7.5°	1037.8	951.6	856.5	800.7	759.5	675.2	553.7	481.2	385.1	329.3	289.1
10°	884.0	769.3	625.3	533.1	465.5	366.5	291.1	267.5	242.1	221.5	201.9
12.5°	703.7	510.6	371.4	317.5	292.0	262.6	231.3	203.8	198.9	200.9	207.8
15°	479.2	341.0	294.0	272.4	254.8	226.4	233.2	241.1	247.9	252.8	261.7
17.5°	360.6	315.6	269.5	270.5	277.3	284.2	295.0	306.7	316.5	323.4	335.2
20°	355.7	327.3	333.2	345.0	352.8	362.6	381.2	392.0	404.7	413.6	426.3
22.5°	387.1	412.6	420.4	429.2	441.0	451.8	471.4	486.1	495.9	504.7	513.5
25°	459.6	479.2	486.1	493.0	500.8	508.6	521.4	534.1	531.2	534.1	535.1
27.5°	464.5	479.2	482.2	486.1	486.1	493.0	493.0	500.8	488.1	486.1	482.2
30°	399.8	404.7	407.7	407.7	403.8	408.7	403.8	409.6	394.9	390.0	385.1
32.5°	295.0	301.8	298.9	297.9	295.0	299.9	294.0	299.9	287.1	284.2	279.3
35°	189.1	199.9	195.0	198.0	196.0	200.9	197.0	200.9	191.1	190.1	187.2
37.5°	118.6	122.5	120.5	121.5	121.5	124.5	122.5	124.5	120.5	120.5	117.6
40°	69.6	71.5	71.5	72.5	73.5	74.5	73.5	75.5	73.5	74.5	71.5
42.5°	40.2	41.2	41.2	42.1	43.1	43.1	43.1	45.1	43.1	44.1	42.1
45°	22.5	24.5	23.5	24.5	24.5	25.5	25.5	25.5	25.5	25.5	24.5
47.5°	13.7	14.7	14.7	14.7	14.7	14.7	15.7	15.7	14.7	14.7	14.7
50°	8.8	8.8	8.8	8.8	9.8	9.8	9.8	8.8	8.8	8.8	7.8
52.5°	5.9	5.9	5.9	5.9	6.9	5.9	5.9	5.9	4.9	4.9	4.9
55°	5.9	5.9	5.9	5.9	5.9	4.9	4.9	4.9	3.9	2.9	2.9
57.5°	5.9	5.9	5.9	5.9	5.9	4.9	4.9	3.9	3.9	2.9	2.9
60°	5.9	5.9	5.9	5.9	5.9	4.9	4.9	3.9	3.9	2.9	2.9
62.5°	5.9	5.9	5.9	5.9	5.9	4.9	4.9	3.9	3.9	2.9	2.9
65°	5.9	5.9	5.9	5.9	5.9	4.9	4.9	4.9	3.9	2.9	2.9
67.5°	5.9	6.9	5.9	5.9	5.9	5.9	4.9	4.9	3.9	2.9	2.9
70°	5.9	6.9	5.9	5.9	5.9	5.9	4.9	4.9	3.9	2.9	2.9
72.5°	6.9	6.9	6.9	5.9	5.9	5.9	5.9	4.9	3.9	2.9	2.9
75°	6.9	6.9	6.9	5.9	5.9	5.9	5.9	4.9	3.9	2.9	2.9
77.5°	6.9	6.9	6.9	6.9	6.9	5.9	5.9	4.9	3.9	3.9	2.9
80°	6.9	6.9	6.9	6.9	6.9	5.9	5.9	4.9	3.9	3.9	2.9
82.5°	6.9	6.9	6.9	6.9	6.9	5.9	5.9	4.9	3.9	3.9	2.9
85°	6.9	6.9	6.9	6.9	6.9	5.9	5.9	4.9	3.9	3.9	2.9
87.5°	6.9	6.9	6.9	6.9	6.9	5.9	5.9	4.9	3.9	3.9	2.9
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: P179637

CATALOG NUMBER: LDA6A45830D010TE LARH20SP 6LA1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5	1395.5
2.5°	1003.5	993.7	986.9	971.2	962.4	952.6	937.9	931.0
5°	637.0	607.6	589.0	561.6	519.4	529.2	506.7	498.8
7.5°	274.4	261.7	257.7	251.9	242.1	237.2	236.2	234.2
10°	188.2	177.4	176.4	177.4	178.4	177.4	177.4	177.4
12.5°	211.7	212.7	214.6	217.6	218.5	218.5	217.6	217.6
15°	266.6	268.5	271.5	275.4	277.3	277.3	277.3	277.3
17.5°	342.0	345.0	349.9	353.8	357.7	357.7	357.7	358.7
20°	440.0	440.0	445.9	450.8	453.7	454.7	455.7	456.7
22.5°	527.3	528.2	532.2	536.1	539.0	538.0	536.1	536.1
25°	543.9	541.0	542.0	542.0	541.0	536.1	536.1	534.1
27.5°	485.1	481.2	481.2	478.2	477.3	475.3	471.4	469.4
30°	385.1	383.2	382.2	379.3	384.2	377.3	373.4	371.4
32.5°	277.3	278.3	277.3	274.4	279.3	272.4	270.5	267.5
35°	186.2	187.2	186.2	184.2	184.2	184.2	182.3	180.3
37.5°	117.6	116.6	117.6	117.6	119.6	116.6	116.6	114.7
40°	71.5	71.5	72.5	72.5	73.5	71.5	70.6	70.6
42.5°	42.1	42.1	43.1	43.1	44.1	42.1	42.1	42.1
45°	24.5	24.5	24.5	24.5	25.5	24.5	23.5	23.5
47.5°	13.7	13.7	13.7	13.7	13.7	13.7	13.7	12.7
50°	7.8	7.8	7.8	7.8	7.8	6.9	6.9	6.9
52.5°	4.9	3.9	3.9	3.9	3.9	2.9	2.9	2.9
55°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0
57.5°	2.0	2.0	2.0	1.0	1.0	1.0	0.0	0.0
60°	2.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0
62.5°	2.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0
65°	2.0	2.0	1.0	1.0	1.0	0.0	0.0	0.0
67.5°	2.0	2.0	2.0	1.0	1.0	0.0	0.0	0.0
70°	2.0	2.0	2.0	1.0	1.0	1.0	0.0	0.0
72.5°	2.0	2.0	2.0	1.0	1.0	1.0	0.0	0.0
75°	2.9	2.0	2.0	2.0	1.0	1.0	0.0	0.0
77.5°	2.9	2.0	2.0	2.0	1.0	1.0	1.0	0.0
80°	2.9	2.0	2.0	2.0	1.0	1.0	1.0	1.0
82.5°	2.9	2.0	2.0	2.0	1.0	1.0	1.0	1.0
85°	2.9	2.0	2.0	2.0	1.0	1.0	1.0	1.0
87.5°	2.9	2.0	2.0	2.0	1.0	1.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)