

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: P179869

Luminaire Tested: **LDA6A65830D010TE LARH20SP 6LA1LI 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P179869  
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: LDA6A65830D010TE 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: 5788.2 lumens  
Efficiency: N/A  
Efficacy: 74.2 lumens/watt  
Spacing Criteria (0/90/45): 2.35 / 0.6 / 1.31  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

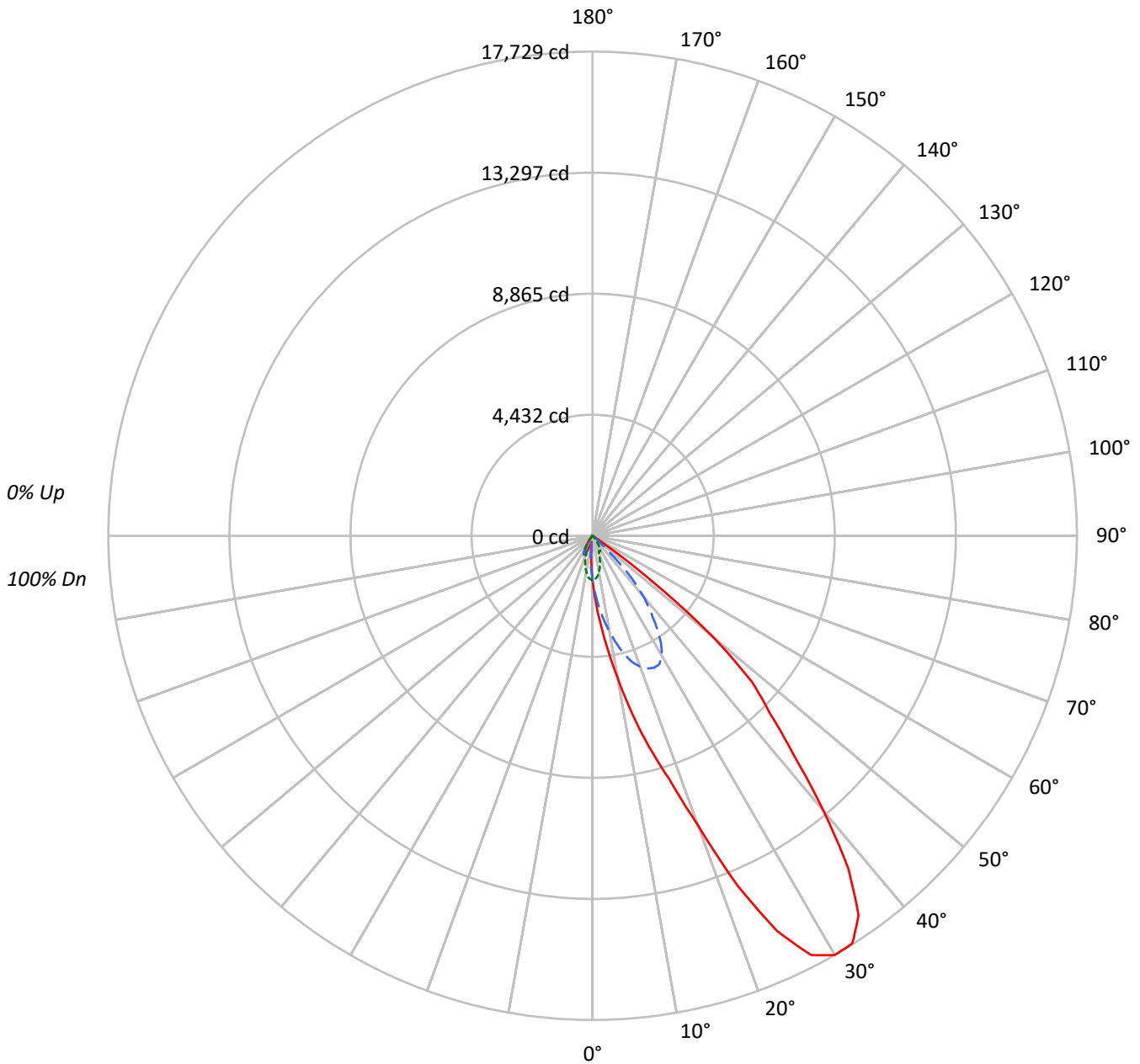
Input Watts (W): 78  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					20					
RC	80					70					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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	109	106	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91					91			
2	105	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	82					82			
3	99	91	85	80	96	89	84	80	87	82	78	84	80	77	82	79	76	74					74			
4	92	83	76	71	90	82	76	71	79	74	70	77	73	69	75	71	68	66					66			
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	69	65	61	60					60			
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	55	54					54			
7	75	64	56	51	73	63	56	51	62	55	51	60	55	50	59	54	50	49					49			
8	70	59	51	46	69	58	51	46	57	50	46	56	50	46	54	49	46	44					44			
9	66	54	47	42	64	53	47	42	52	46	42	51	46	42	50	45	41	40					40			
10	61	50	43	38	60	49	43	38	48	42	38	48	42	38	47	41	38	36					36			

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

	0°	90°	180°
0°	89582	89582	89582
5°	173580	85367	28791
10°	294907	74704	12931
15°	454435	59586	20556
20°	657847	38778	35756
25°	965179	37424	45976
30°	1122249	35448	35233
35°	1135905	18779	18625
40°	940448	7078	7815
45°	710275	2403	2853
50°	485954	878	878
55°	67591	765	105
60°	1765	757	0
65°	441	1038	0
70°	176	1282	0
75°	0	1694	0
80°	0	2904	347
85°	0	5787	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	171.4	3.0
10°-20°	724.7	12.5
20°-30°	1653.1	28.6
30°-40°	1913.0	33.1
40°-50°	1153.7	19.9
50°-60°	156.7	2.7
60°-70°	5.0	0.1
70°-80°	5.5	0.1
80°-90°	5.1	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°	2549.2	44.0
0°-40°	4462.2	77.1
0°-60°	5772.6	99.7
0°-90°	5788.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5788.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1634	1634	1634	1634	1634	
5°	3154	2583	1551	849	523	367
15°	8007	4501	1050	323	362	2370
25°	15957	5334	619	744	760	7221
35°	16973	4066	281	286	278	10229
45°	9162	1107	31	38	37	7164
55°	707	8	8	6	1	1386
65°	3	5	8	5	0	5
75°	0	6	8	6	0	0
85°	0	6	9	6	0	0
90°	0	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°	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1
2.5°	2363.1	2341.3	2350.5	2326.3	2265.4	2252.8	2251.6	2235.5	2183.8	2143.5	2095.2
5°	3154.3	3153.2	3158.9	3107.2	3000.2	2966.9	2950.8	2911.7	2786.3	2689.7	2582.8
7.5°	4142.1	4135.2	4128.3	4034.0	3866.1	3801.7	3760.3	3618.9	3446.4	3275.1	3084.2
10°	5297.8	5294.4	5267.9	5102.3	4833.2	4714.8	4634.3	4410.1	4132.9	3889.1	3564.8
12.5°	6639.8	6608.8	6561.6	6319.0	5949.8	5821.0	5644.0	5288.6	4863.1	4489.4	4036.3
15°	8007.1	7962.3	7878.3	7566.7	7109.0	6889.3	6669.7	6201.7	5624.4	5081.6	4500.9
17.5°	9344.5	9295.0	9098.4	8569.4	8122.1	7854.2	7610.4	6967.5	6289.1	5591.1	4855.1
20°	11276.4	11097.0	10754.3	9920.6	9089.2	8606.2	8321.0	7641.4	6802.0	5988.9	5106.9
22.5°	13856.9	13459.0	12728.8	11374.2	10186.3	9489.4	9022.5	8118.6	7171.1	6248.8	5262.2
25°	15956.7	15776.2	14945.9	13018.6	11164.9	10343.8	9694.1	8498.1	7440.2	6422.5	5333.5
27.5°	17310.2	17265.3	16316.6	14380.1	11964.1	10886.6	10161.0	8748.8	7570.1	6459.3	5299.0
30°	17728.8	17798.9	16888.2	14842.4	12195.2	10995.8	10202.4	8752.3	7470.1	6292.5	5078.2
32.5°	17697.7	17701.2	16584.6	14443.4	11819.2	10678.4	9857.4	8461.3	7100.9	5875.1	4658.4
35°	16973.3	16795.0	15532.4	13217.5	10944.1	9937.9	9174.3	7897.9	6492.6	5247.2	4066.2
37.5°	15382.9	15149.4	13677.5	11647.8	9908.0	8977.7	8361.3	7158.4	5768.1	4576.8	3454.4
40°	13141.6	12810.4	11596.1	10188.6	8774.1	8074.9	7557.5	6331.6	4993.1	3919.0	2880.6
42.5°	10898.1	10735.9	9933.3	8789.1	7820.8	7163.0	6622.6	5465.7	4247.9	3270.5	2155.0
45°	9161.6	9022.5	8483.2	7728.8	6779.0	6178.7	5657.8	4563.0	3300.4	2194.1	1107.4
47.5°	7896.7	7784.0	7267.7	6475.4	5433.5	4776.9	4239.9	2992.2	1869.8	947.6	277.1
50°	5698.0	5583.0	5077.0	4159.4	3218.7	2669.0	2282.7	1336.2	530.1	192.0	28.7
52.5°	2793.2	2698.9	2355.1	1762.9	1183.3	851.0	622.1	250.7	60.9	20.7	13.8
55°	707.2	649.7	541.6	340.4	166.7	100.0	64.4	23.0	14.9	11.5	8.0
57.5°	40.2	39.1	35.6	26.4	19.5	17.2	14.9	11.5	8.0	6.9	5.7
60°	16.1	14.9	13.8	11.5	9.2	8.0	8.0	5.7	4.6	4.6	4.6
62.5°	6.9	6.9	6.9	5.7	4.6	4.6	4.6	3.4	4.6	4.6	4.6
65°	3.4	3.4	3.4	2.3	2.3	2.3	3.4	3.4	3.4	4.6	4.6
67.5°	2.3	1.1	1.1	1.1	2.3	2.3	2.3	3.4	3.4	4.6	4.6
70°	1.1	1.1	1.1	1.1	2.3	2.3	2.3	3.4	3.4	4.6	5.7
72.5°	0.0	1.1	1.1	1.1	2.3	2.3	2.3	3.4	3.4	4.6	5.7
75°	0.0	1.1	1.1	1.1	2.3	2.3	2.3	3.4	4.6	4.6	5.7
77.5°	0.0	1.1	1.1	1.1	2.3	2.3	2.3	3.4	4.6	4.6	5.7
80°	0.0	1.1	1.1	1.1	2.3	2.3	2.3	3.4	4.6	4.6	5.7
82.5°	0.0	0.0	1.1	1.1	2.3	2.3	2.3	3.4	4.6	4.6	5.7
85°	0.0	0.0	1.1	1.1	2.3	2.3	2.3	3.4	4.6	4.6	5.7
87.5°	0.0	0.0	1.1	1.1	2.3	2.3	2.3	3.4	3.4	4.6	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°	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1
2.5°	2033.1	1991.7	1930.8	1890.5	1851.4	1814.6	1753.7	1719.2	1657.1	1599.6	1550.1
5°	2454.0	2350.5	2225.2	2118.2	2049.2	1981.4	1858.3	1767.5	1653.6	1551.3	1457.0
7.5°	2879.5	2696.6	2490.8	2314.8	2207.9	2103.3	1919.3	1772.1	1611.1	1465.0	1325.9
10°	3265.9	2991.0	2700.1	2448.2	2303.3	2167.7	1925.0	1729.5	1522.5	1342.0	1167.2
12.5°	3624.6	3248.6	2869.1	2540.2	2360.8	2197.6	1900.9	1661.7	1415.6	1201.7	998.2
15°	3944.3	3461.3	2992.2	2593.1	2382.7	2189.5	1844.5	1566.2	1289.1	1049.9	792.3
17.5°	4187.0	3593.6	3046.2	2585.1	2343.6	2128.6	1747.9	1446.6	1154.5	864.8	573.8
20°	4334.2	3649.9	3034.7	2523.0	2259.7	2032.0	1632.9	1316.7	992.4	664.7	506.0
22.5°	4396.3	3645.3	2980.7	2429.8	2156.2	1926.2	1522.5	1190.2	822.2	601.4	527.8
25°	4406.6	3598.2	2904.8	2327.5	2053.8	1825.0	1411.0	1046.5	714.1	618.7	591.1
27.5°	4327.3	3487.8	2762.2	2180.3	1910.1	1673.2	1244.2	831.4	670.4	616.4	634.8
30°	4092.7	3236.0	2510.3	1921.6	1660.5	1423.6	888.9	652.0	556.6	560.0	564.6
32.5°	3679.8	2817.4	2105.6	1543.2	1258.0	938.4	553.1	435.8	423.2	423.2	420.9
35°	3129.0	2305.6	1652.5	976.3	625.6	450.8	286.3	287.5	281.7	280.6	279.4
37.5°	2559.8	1819.2	1046.5	403.6	271.4	188.6	169.0	171.3	169.0	172.5	170.2
40°	2018.2	1123.5	381.8	128.8	95.4	92.0	94.3	96.6	96.6	98.9	98.9
42.5°	1172.9	372.6	100.0	51.7	51.7	49.4	50.6	52.9	54.0	55.2	54.0
45°	348.4	77.0	32.2	28.7	28.7	27.6	27.6	28.7	29.9	31.0	31.0
47.5°	55.2	21.8	18.4	16.1	16.1	16.1	16.1	16.1	17.2	17.2	18.4
50°	17.2	13.8	11.5	10.3	10.3	9.2	9.2	10.3	10.3	10.3	11.5
52.5°	10.3	8.0	8.0	6.9	8.0	8.0	6.9	8.0	8.0	8.0	9.2
55°	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	8.0	8.0	8.0
57.5°	5.7	5.7	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
60°	5.7	5.7	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	8.0
62.5°	5.7	5.7	6.9	6.9	6.9	6.9	6.9	6.9	8.0	8.0	8.0
65°	5.7	5.7	6.9	6.9	6.9	6.9	6.9	8.0	8.0	8.0	8.0
67.5°	5.7	6.9	6.9	6.9	6.9	8.0	8.0	8.0	8.0	8.0	8.0
70°	5.7	6.9	6.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
72.5°	5.7	6.9	6.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
75°	6.9	6.9	6.9	8.0	8.0	8.0	8.0	8.0	8.0	8.0	9.2
77.5°	6.9	6.9	8.0	8.0	8.0	8.0	8.0	8.0	9.2	9.2	9.2
80°	6.9	6.9	8.0	8.0	8.0	8.0	8.0	9.2	9.2	9.2	9.2
82.5°	6.9	6.9	8.0	8.0	8.0	8.0	8.0	9.2	9.2	9.2	9.2
85°	6.9	6.9	8.0	8.0	8.0	8.0	8.0	9.2	9.2	9.2	9.2
87.5°	6.9	6.9	8.0	8.0	8.0	8.0	8.0	9.2	9.2	9.2	9.2
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°	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1
2.5°	1507.6	1454.7	1429.4	1393.7	1368.4	1312.1	1289.1	1250.0	1217.8	1164.9	1168.3
5°	1376.5	1276.4	1208.6	1155.7	1118.9	1029.2	969.4	906.2	848.7	777.4	750.9
7.5°	1194.8	1071.8	968.3	905.0	857.9	738.3	606.0	502.5	424.3	368.0	346.1
10°	1013.1	853.3	688.8	591.1	523.2	408.2	349.6	322.0	296.7	265.6	244.9
12.5°	801.5	573.8	424.3	385.2	357.6	319.7	281.7	251.8	257.6	258.7	266.8
15°	547.4	412.8	365.7	339.2	309.3	287.5	300.1	308.2	323.1	324.3	334.6
17.5°	445.0	387.5	349.6	348.4	350.7	363.4	382.9	393.3	412.8	417.4	432.4
20°	445.0	411.7	443.9	443.9	449.6	466.9	492.2	507.1	529.0	537.0	555.4
22.5°	507.1	530.1	570.4	575.0	577.3	595.7	627.9	642.8	668.1	672.7	692.3
25°	618.7	639.4	676.2	679.6	680.8	694.6	718.7	726.8	744.0	734.8	746.3
27.5°	654.3	663.5	686.5	688.8	683.1	688.8	698.0	698.0	703.8	685.4	688.8
30°	575.0	577.3	588.8	589.9	577.3	579.6	580.7	579.6	578.4	558.9	558.9
32.5°	426.6	426.6	441.6	438.1	424.3	427.8	427.8	427.8	426.6	410.5	408.2
35°	282.9	284.0	296.7	294.4	284.0	286.3	286.3	289.8	286.3	277.1	274.8
37.5°	172.5	173.6	179.4	180.5	177.1	178.2	179.4	178.2	180.5	175.9	173.6
40°	100.0	102.3	106.9	108.1	106.9	106.9	108.1	109.2	113.8	108.1	105.8
42.5°	58.6	59.8	62.1	62.1	62.1	62.1	63.2	64.4	65.5	64.4	63.2
45°	33.3	34.5	35.6	35.6	36.8	35.6	36.8	36.8	37.9	36.8	36.8
47.5°	19.5	19.5	20.7	20.7	21.8	20.7	21.8	21.8	21.8	20.7	20.7
50°	11.5	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	11.5	11.5
52.5°	9.2	9.2	9.2	9.2	9.2	8.0	8.0	8.0	8.0	6.9	6.9
55°	8.0	8.0	8.0	8.0	8.0	8.0	6.9	5.7	5.7	4.6	4.6
57.5°	6.9	8.0	8.0	8.0	8.0	6.9	6.9	5.7	4.6	3.4	3.4
60°	8.0	8.0	8.0	8.0	6.9	6.9	6.9	5.7	4.6	3.4	3.4
62.5°	8.0	8.0	8.0	8.0	8.0	6.9	6.9	5.7	4.6	3.4	3.4
65°	8.0	8.0	8.0	8.0	8.0	6.9	6.9	5.7	4.6	3.4	3.4
67.5°	8.0	8.0	8.0	8.0	8.0	6.9	6.9	5.7	4.6	4.6	3.4
70°	8.0	9.2	9.2	8.0	8.0	8.0	6.9	5.7	5.7	4.6	3.4
72.5°	8.0	9.2	9.2	8.0	8.0	8.0	6.9	5.7	5.7	4.6	3.4
75°	9.2	9.2	9.2	9.2	8.0	8.0	6.9	6.9	5.7	4.6	3.4
77.5°	9.2	9.2	9.2	9.2	8.0	8.0	6.9	6.9	5.7	4.6	3.4
80°	9.2	9.2	9.2	9.2	9.2	8.0	8.0	6.9	5.7	4.6	4.6
82.5°	9.2	9.2	9.2	9.2	9.2	8.0	8.0	6.9	5.7	4.6	4.6
85°	9.2	9.2	9.2	9.2	9.2	8.0	8.0	6.9	5.7	4.6	3.4
87.5°	9.2	9.2	9.2	9.2	8.0	8.0	6.9	6.9	5.7	4.6	3.4
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: P179869

CATALOG NUMBER: LDA6A65830D010TE LARH20SP 6LA1LI 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1	1634.1
2.5°	1125.8	1099.4	1087.9	1106.3	1097.1	1069.5	1075.2	1058.0
5°	671.6	631.3	606.0	617.5	580.7	547.4	547.4	523.2
7.5°	324.3	311.6	304.7	307.0	299.0	288.6	282.9	282.9
10°	227.7	223.1	224.2	224.2	231.1	230.0	233.4	232.3
12.5°	270.2	272.5	273.7	278.3	284.0	284.0	287.5	285.2
15°	346.1	343.8	350.7	351.9	361.1	362.2	366.8	362.2
17.5°	440.4	445.0	451.9	450.8	469.2	470.3	470.3	469.2
20°	566.9	570.4	577.3	579.6	601.4	603.7	611.8	612.9
22.5°	704.9	704.9	708.4	713.0	733.7	734.8	738.3	738.3
25°	752.1	745.2	746.3	752.1	763.6	759.0	762.4	760.1
27.5°	691.1	680.8	678.5	686.5	694.6	681.9	686.5	686.5
30°	561.2	552.0	549.7	557.7	563.5	549.7	554.3	556.6
32.5°	410.5	404.8	403.6	409.4	414.0	402.5	407.1	410.5
35°	277.1	274.8	272.5	273.7	280.6	271.4	276.0	278.3
37.5°	175.9	171.3	172.5	174.8	179.4	173.6	178.2	178.2
40°	108.1	105.8	105.8	108.1	110.4	105.8	108.1	109.2
42.5°	63.2	63.2	63.2	64.4	65.5	63.2	63.2	64.4
45°	36.8	35.6	35.6	36.8	37.9	35.6	36.8	36.8
47.5°	20.7	19.5	19.5	20.7	20.7	19.5	20.7	20.7
50°	11.5	10.3	10.3	11.5	11.5	10.3	10.3	10.3
52.5°	5.7	5.7	5.7	5.7	5.7	5.7	4.6	4.6
55°	3.4	3.4	2.3	2.3	2.3	2.3	2.3	1.1
57.5°	2.3	2.3	1.1	1.1	1.1	1.1	0.0	0.0
60°	2.3	2.3	1.1	1.1	1.1	0.0	0.0	0.0
62.5°	2.3	2.3	1.1	1.1	1.1	0.0	0.0	0.0
65°	2.3	2.3	1.1	1.1	1.1	0.0	0.0	0.0
67.5°	2.3	2.3	1.1	1.1	1.1	0.0	0.0	0.0
70°	3.4	2.3	2.3	1.1	1.1	1.1	0.0	0.0
72.5°	3.4	2.3	2.3	2.3	1.1	1.1	0.0	0.0
75°	3.4	2.3	2.3	2.3	1.1	1.1	0.0	0.0
77.5°	3.4	2.3	2.3	2.3	1.1	1.1	1.1	0.0
80°	3.4	2.3	2.3	2.3	1.1	1.1	1.1	1.1
82.5°	3.4	2.3	2.3	2.3	1.1	1.1	1.1	1.1
85°	3.4	2.3	2.3	2.3	1.1	1.1	1.1	0.0
87.5°	3.4	2.3	2.3	2.3	1.1	1.1	1.1	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)