

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: P182849

Luminaire Tested: **LDSQA4A13840D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182849
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26804)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA4A13840D010TE LAR35FL 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 35° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1708.8 lumens
Efficiency: N/A
Efficacy: 76.7 lumens/watt
Spacing Criteria (0/90/45): 2.46 / 0.61 / 1.2
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

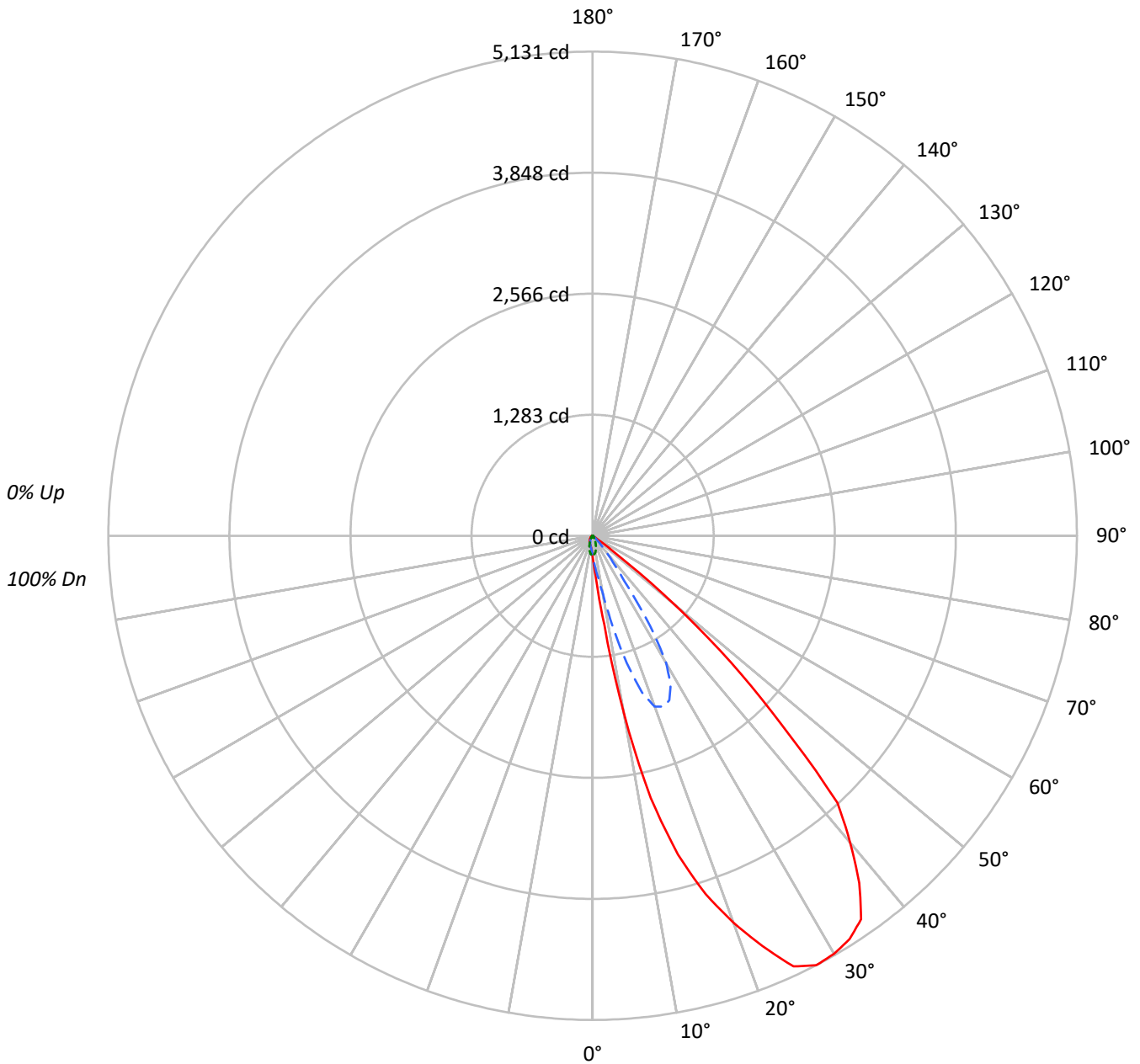
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91																			
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	82																			
3	99	91	85	80	97	90	84	80	87	82	78	84	80	77	82	79	76	74																			
4	92	83	77	71	90	82	76	71	80	74	70	78	73	69	76	72	68	67																			
5	86	76	69	64	84	75	68	64	73	67	63	71	66	62	70	65	62	60																			
6	80	70	62	57	79	69	62	57	67	61	57	66	60	56	64	59	56	54																			
7	75	64	57	52	74	63	56	51	62	56	51	60	55	51	59	54	50	49																			
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44																			
9	66	54	47	42	64	54	47	42	53	46	42	52	46	42	51	45	42	40																			
10	62	50	43	38	60	50	43	38	49	42	38	48	42	38	47	42	38	36																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	20470	20470	20470
5°	47971	19323	13507
10°	189539	16979	11263
15°	350784	13590	9879
20°	449783	9897	8938
25°	538149	7023	7921
30°	572231	4609	6969
35°	586455	2791	6067
40°	536843	1808	5210
45°	387375	1274	4261
50°	169113	1010	3557
55°	11654	861	2989
60°	2112	814	2441
65°	779	779	1742
70°	708	963	1190
75°	636	1273	1273
80°	0	1897	1395
85°	0	3779	889



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.8	1.8
10°-20°	241.9	14.2
20°-30°	506.3	29.6
30°-40°	563.6	33.0
40°-50°	323.5	18.9
50°-60°	32.3	1.9
60°-70°	5.1	0.3
70°-80°	3.2	0.2
80°-90°	2.0	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°	779.0	45.6
0°-40°	1342.6	78.6
0°-60°	1698.5	99.4
0°-90°	1708.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1708.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	211	211	211	211	211	
5°	493	340	199	145	139	90
15°	3498	1396	136	95	98	989
25°	5035	1922	66	58	74	2280
35°	4959	587	24	34	51	3028
45°	2828	71	9	18	31	2159
55°	69	10	5	11	18	206
65°	3	2	3	7	8	4
75°	2	2	3	4	3	1
85°	0	2	3	2	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°	211.3	211.3	211.3	211.3	211.3	211.3	211.3	211.3	211.3	211.3	211.3
2.5°	315.7	308.9	302.2	298.0	293.8	299.7	295.5	293.8	282.0	276.1	271.1
5°	493.3	480.7	462.1	447.0	431.8	435.2	423.4	409.1	379.6	358.6	340.1
7.5°	952.0	920.9	863.7	808.1	752.5	742.4	705.4	641.4	558.9	496.6	442.8
10°	1926.8	1832.5	1727.3	1613.7	1480.7	1443.6	1351.9	1178.5	989.1	772.7	616.2
12.5°	2844.4	2801.4	2677.7	2530.4	2386.4	2298.0	2202.9	1916.7	1616.2	1267.7	976.5
15°	3497.6	3471.5	3362.9	3229.0	3074.2	3016.9	2900.8	2615.4	2235.8	1819.1	1396.5
17.5°	3981.6	3937.0	3823.3	3677.7	3494.2	3445.4	3306.5	3022.8	2628.9	2210.5	1741.6
20°	4362.9	4335.1	4187.8	4012.7	3793.0	3734.1	3571.6	3276.2	2847.7	2403.3	1926.0
22.5°	4705.5	4658.4	4477.4	4268.6	4017.8	3954.7	3773.7	3449.6	2989.1	2494.2	1958.8
25°	5034.6	4963.1	4743.4	4469.8	4175.2	4089.3	3890.7	3547.2	3041.3	2501.8	1921.8
27.5°	5130.6	5094.4	4891.5	4573.4	4232.4	4135.6	3928.6	3569.1	3022.0	2432.7	1788.8
30°	5115.5	5085.2	4916.0	4583.5	4222.3	4120.5	3910.0	3501.8	2909.2	2252.6	1553.9
32.5°	5067.5	5055.7	4851.1	4495.9	4128.1	4016.9	3789.7	3334.3	2697.9	1978.2	1135.6
35°	4958.9	4912.6	4657.5	4323.3	3969.8	3847.7	3591.0	3094.4	2419.3	1440.3	586.7
37.5°	4640.7	4604.5	4403.3	4110.4	3766.1	3609.5	3338.5	2784.6	1872.9	819.0	351.0
40°	4245.1	4227.4	4069.1	3807.3	3439.5	3262.7	2968.1	2278.7	1143.1	465.5	231.5
42.5°	3839.3	3834.3	3665.1	3391.5	2992.5	2789.6	2484.1	1537.1	607.8	281.2	133.8
45°	2827.5	2857.8	2740.0	2575.8	2271.1	2123.8	1727.3	792.1	350.2	155.7	70.7
47.5°	1983.2	1949.5	1740.8	1453.7	1175.1	995.0	752.5	374.6	186.9	81.7	40.4
50°	1122.1	1128.0	939.4	760.1	498.3	394.8	299.7	188.6	90.1	42.9	24.4
52.5°	292.9	306.4	264.3	227.3	193.6	157.4	127.1	81.7	42.9	25.3	16.0
55°	69.0	71.6	66.5	62.3	58.9	52.2	46.3	35.4	23.6	16.0	10.1
57.5°	24.4	25.3	24.4	24.4	23.6	22.7	21.0	18.5	14.3	10.1	6.7
60°	10.9	11.8	10.9	11.8	11.8	11.8	11.8	11.8	8.4	5.9	4.2
62.5°	5.1	5.1	5.1	5.1	5.9	5.9	6.7	6.7	5.1	4.2	3.4
65°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	2.5
67.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
70°	2.5	2.5	2.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.5
72.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
75°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
77.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.7	1.7	1.7	1.7
80°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.7	1.7	1.7
82.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.7	1.7	1.7
85°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.7	1.7	1.7
87.5°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.7	1.7	1.7
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°	211.3	211.3	211.3	211.3	211.3	211.3	211.3	211.3	211.3	211.3	211.3
2.5°	261.8	260.9	251.7	245.0	241.6	236.5	230.6	222.2	213.0	204.6	201.2
5°	318.2	307.2	287.9	271.9	264.3	256.7	243.3	228.1	213.8	198.7	191.1
7.5°	391.4	359.4	321.6	292.1	279.5	266.8	247.5	226.4	207.1	186.9	175.9
10°	491.6	417.5	351.9	304.7	286.2	269.4	241.6	215.5	194.4	172.6	158.3
12.5°	702.9	519.4	383.8	310.6	286.2	264.3	230.6	200.3	176.8	154.0	140.6
15°	1012.7	701.2	453.7	316.5	280.3	252.5	213.8	181.0	155.7	135.5	122.9
17.5°	1262.7	868.7	540.4	331.7	272.7	236.5	191.9	157.4	133.8	115.3	105.2
20°	1388.9	939.4	580.0	334.2	254.2	211.3	165.8	133.0	112.0	96.0	87.5
22.5°	1386.4	916.7	544.6	292.9	223.1	182.7	139.7	109.4	92.6	80.0	73.2
25°	1298.9	811.5	454.6	234.0	180.1	151.5	113.6	88.4	74.9	65.7	59.8
27.5°	1134.7	659.1	339.2	173.4	140.6	119.5	88.4	70.7	59.8	53.0	48.8
30°	890.6	441.1	213.8	128.8	106.9	90.1	68.2	54.7	47.1	41.2	38.7
32.5°	490.8	229.8	143.9	94.3	78.3	65.7	50.5	39.6	34.5	30.3	29.5
35°	271.1	162.5	102.7	63.1	52.2	44.6	34.5	28.6	25.3	23.6	23.6
37.5°	191.9	104.4	61.4	39.6	33.7	29.5	23.6	20.2	19.4	18.5	18.5
40°	115.3	61.4	37.0	26.1	22.7	20.2	17.7	15.2	15.2	14.3	15.2
42.5°	63.1	37.0	25.3	18.5	16.0	15.2	12.6	11.8	11.8	11.8	12.6
45°	37.9	24.4	17.7	13.5	11.8	10.1	9.3	8.4	9.3	9.3	10.1
47.5°	24.4	17.7	11.8	8.4	7.6	6.7	5.9	6.7	6.7	7.6	8.4
50°	16.8	10.9	7.6	5.1	5.1	4.2	5.1	5.1	5.9	6.7	7.6
52.5°	10.9	7.6	5.1	4.2	3.4	3.4	3.4	4.2	5.1	5.9	6.7
55°	6.7	5.1	4.2	3.4	3.4	3.4	3.4	3.4	4.2	5.1	5.9
57.5°	5.1	4.2	3.4	2.5	2.5	2.5	3.4	3.4	4.2	4.2	5.1
60°	3.4	3.4	2.5	2.5	2.5	2.5	2.5	3.4	3.4	4.2	5.1
62.5°	3.4	3.4	2.5	2.5	2.5	2.5	3.4	3.4	3.4	4.2	4.2
65°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	3.4	4.2
67.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	4.2
70°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	4.2
72.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	3.4
75°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	3.4	3.4
77.5°	1.7	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	3.4	3.4
80°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	3.4	3.4
82.5°	1.7	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	3.4	3.4
85°	1.7	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	3.4	3.4
87.5°	1.7	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3.4	3.4	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	211.3	211.3	211.3	211.3	211.3	211.3	211.3	211.3	211.3	211.3	211.3
2.5°	197.0	191.1	186.0	187.7	184.3	178.5	176.8	172.6	167.5	166.7	166.7
5°	182.7	173.4	165.8	165.0	161.6	154.9	153.2	149.0	144.8	143.9	143.1
7.5°	165.0	154.9	148.2	146.5	143.9	138.1	137.2	133.0	130.5	128.8	128.8
10°	147.3	138.1	132.2	131.3	129.6	124.6	123.7	120.4	117.8	117.0	116.2
12.5°	130.5	122.9	117.8	117.0	115.3	111.1	110.3	107.7	106.1	105.2	105.2
15°	114.5	107.7	103.5	102.7	101.9	97.6	97.6	96.0	95.1	95.1	96.0
17.5°	98.5	92.6	89.2	88.4	88.4	85.0	85.9	85.0	85.0	85.0	86.7
20°	82.5	77.4	74.9	75.8	74.1	73.2	74.1	74.1	74.1	75.8	78.3
22.5°	69.0	64.8	62.3	63.1	63.1	62.3	63.1	64.0	65.7	68.2	70.7
25°	56.4	53.0	52.2	53.0	53.0	53.0	54.7	56.4	58.1	60.6	63.1
27.5°	45.5	42.9	42.9	43.8	44.6	44.6	47.1	48.8	51.3	53.9	56.4
30°	36.2	35.4	35.4	37.0	37.0	37.9	41.2	42.9	44.6	47.1	49.7
32.5°	28.6	28.6	29.5	31.1	31.1	32.8	35.4	37.0	38.7	41.2	43.8
35°	23.6	24.4	25.3	26.1	26.9	27.8	30.3	32.0	33.7	36.2	37.9
37.5°	19.4	20.2	21.0	22.7	22.7	23.6	26.1	27.8	28.6	31.1	33.7
40°	16.0	16.8	17.7	19.4	19.4	20.2	22.7	23.6	24.4	26.9	29.5
42.5°	13.5	14.3	15.2	16.0	16.8	17.7	19.4	20.2	21.9	23.6	25.3
45°	10.9	11.8	12.6	13.5	14.3	15.2	16.0	17.7	18.5	20.2	21.9
47.5°	9.3	10.1	10.9	11.8	12.6	12.6	14.3	15.2	16.0	17.7	19.4
50°	8.4	9.3	10.1	10.1	10.9	11.8	12.6	13.5	14.3	15.2	16.8
52.5°	6.7	7.6	8.4	9.3	9.3	10.1	10.9	11.8	12.6	13.5	14.3
55°	6.7	6.7	7.6	8.4	8.4	9.3	10.1	10.9	10.9	11.8	12.6
57.5°	5.9	6.7	6.7	7.6	7.6	8.4	9.3	9.3	10.1	10.1	10.9
60°	5.1	5.9	6.7	6.7	6.7	7.6	7.6	8.4	8.4	9.3	9.3
62.5°	5.1	5.9	5.9	6.7	6.7	6.7	7.6	7.6	7.6	8.4	8.4
65°	5.1	5.1	5.9	5.9	5.9	5.9	6.7	6.7	6.7	7.6	7.6
67.5°	4.2	5.1	5.1	5.1	5.9	5.9	5.9	5.9	5.9	6.7	6.7
70°	4.2	4.2	5.1	5.1	5.1	5.1	5.1	5.9	5.9	5.9	5.9
72.5°	4.2	4.2	4.2	4.2	5.1	5.1	5.1	5.1	5.1	5.1	5.1
75°	3.4	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
77.5°	3.4	3.4	3.4	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
80°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
82.5°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	2.5	2.5
85°	3.4	3.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
87.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.7	1.7	1.7
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: P182849

CATALOG NUMBER: LDSQA4A13840D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	211.3	211.3	211.3	211.3	211.3	211.3	211.3	211.3
2.5°	163.3	161.6	160.8	163.3	159.9	161.6	160.8	161.6
5°	140.6	138.9	138.1	140.6	137.2	138.9	137.2	138.9
7.5°	126.3	125.4	124.6	126.3	123.7	125.4	124.6	125.4
10°	114.5	113.6	112.8	115.3	112.8	114.5	113.6	114.5
12.5°	104.4	104.4	103.5	105.2	103.5	105.2	104.4	105.2
15°	95.1	96.0	95.1	96.8	96.0	97.6	96.8	98.5
17.5°	87.5	88.4	88.4	90.9	90.1	92.6	91.8	92.6
20°	80.0	80.8	81.7	83.3	83.3	85.9	85.0	86.7
22.5°	72.4	74.1	74.1	76.6	76.6	79.1	79.1	80.0
25°	64.8	67.3	68.2	69.9	70.7	73.2	73.2	74.1
27.5°	58.9	60.6	61.4	64.0	64.8	67.3	67.3	69.0
30°	52.2	54.7	55.6	57.2	58.1	60.6	60.6	62.3
32.5°	46.3	48.0	49.7	51.3	52.2	54.7	54.7	56.4
35°	40.4	42.9	43.8	45.5	47.1	49.7	49.7	51.3
37.5°	35.4	37.9	38.7	40.4	42.1	44.6	44.6	46.3
40°	31.1	33.7	34.5	36.2	37.0	40.4	40.4	41.2
42.5°	27.8	29.5	30.3	32.0	32.8	34.5	34.5	36.2
45°	23.6	25.3	26.1	26.9	28.6	30.3	30.3	31.1
47.5°	20.2	21.9	22.7	23.6	24.4	26.1	26.1	27.8
50°	17.7	18.5	19.4	20.2	21.0	22.7	22.7	23.6
52.5°	15.2	16.0	16.8	17.7	18.5	19.4	20.2	21.0
55°	13.5	14.3	14.3	15.2	16.0	16.8	16.8	17.7
57.5°	11.8	12.6	12.6	12.6	13.5	14.3	14.3	15.2
60°	10.1	10.9	10.9	10.9	11.8	11.8	11.8	12.6
62.5°	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
65°	7.6	7.6	7.6	7.6	7.6	7.6	6.7	7.6
67.5°	6.7	6.7	6.7	5.9	5.9	5.9	5.9	5.9
70°	5.9	5.9	5.9	5.1	5.1	5.1	4.2	4.2
72.5°	5.1	5.1	5.1	4.2	4.2	4.2	3.4	3.4
75°	4.2	4.2	4.2	4.2	3.4	3.4	3.4	3.4
77.5°	3.4	3.4	3.4	3.4	3.4	3.4	2.5	2.5
80°	3.4	2.5	2.5	2.5	2.5	2.5	2.5	2.5
82.5°	2.5	2.5	2.5	2.5	1.7	1.7	1.7	1.7
85°	1.7	1.7	1.7	1.7	1.7	1.7	0.8	0.8
87.5°	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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)