

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: P182838

Luminaire Tested: **LDSQA4A09827D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182838
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: LDSQA4A09827D010TE LAR35FL 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 35° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1059.1 lumens
Efficiency: N/A
Efficacy: 76.5 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

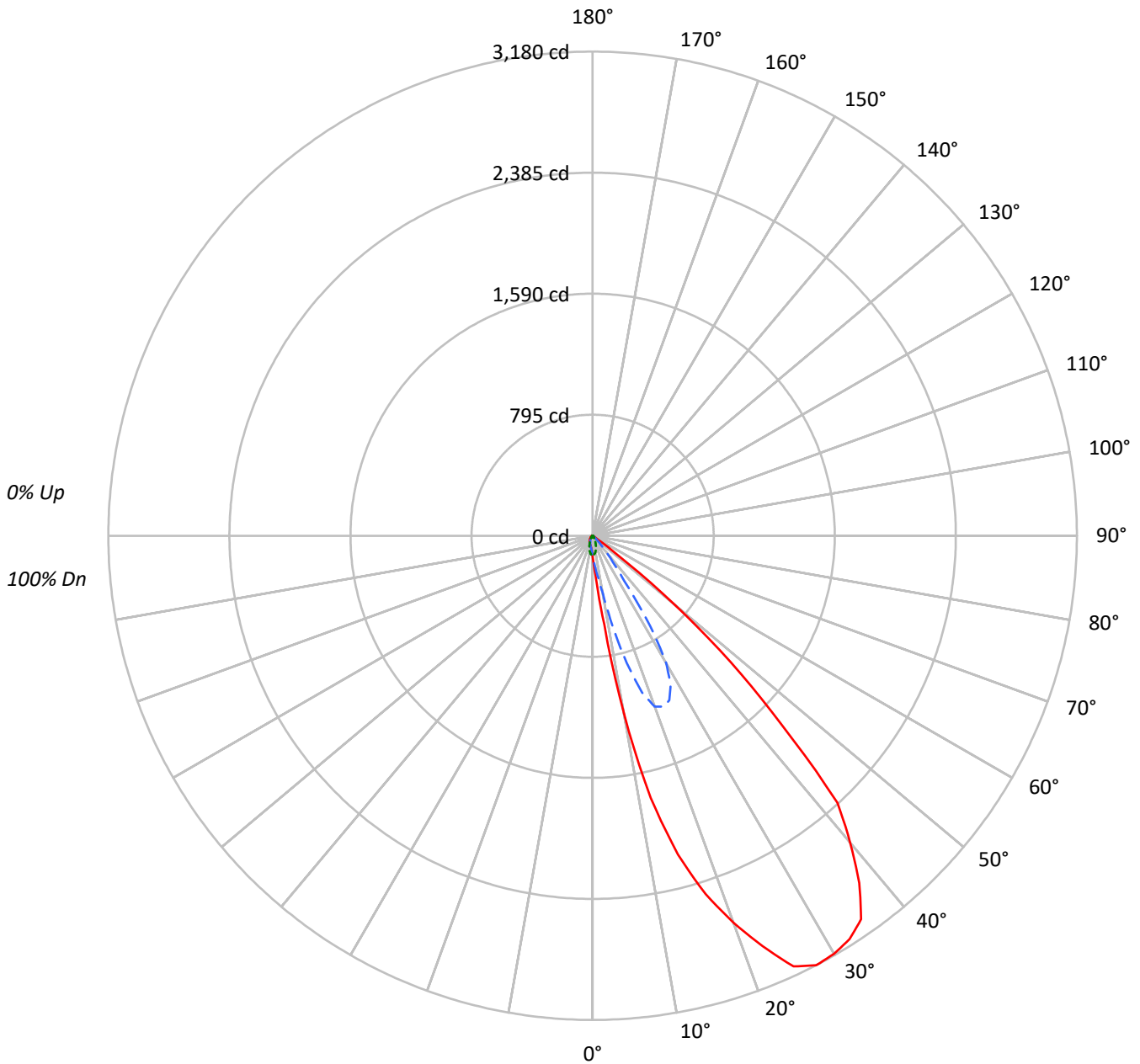
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P182838

CATALOG NUMBER: LDSQA4A09827D010TE LAR35FL 4LSQAL1H 30°

Luminous Intensity Polar Plot





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CATALOG NUMBER: LDSQA4A09827D010TE LAR35FL 4LSQAL1H 30°

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	12681	12681	12681
5°	29728	11971	8373
10°	117473	10516	6984
15°	217405	8425	6118
20°	278763	6134	5536
25°	333530	4350	4906
30°	354648	2864	4318
35°	363470	1727	3761
40°	332721	1126	3237
45°	240083	781	2644
50°	104805	633	2200
55°	7229	524	1858
60°	1318	504	1511
65°	481	481	1077
70°	453	595	736
75°	374	786	786
80°	0	1172	893
85°	0	2334	556



TEST NUMBER: P182838

CATALOG NUMBER: LDSQA4A09827D010TE LAR35FL 4LSQAL1H 30°

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	19.1	1.8
10°-20°	149.9	14.2
20°-30°	313.8	29.6
30°-40°	349.3	33.0
40°-50°	200.5	18.9
50°-60°	20.0	1.9
60°-70°	3.2	0.3
70°-80°	2.0	0.2
80°-90°	1.2	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°	482.8	45.6
0°-40°	832.1	78.6
0°-60°	1052.7	99.4
0°-90°	1059.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1059.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	131	131	131	131	131	
5°	306	211	123	90	86	56
15°	2168	866	84	59	61	613
25°	3120	1191	41	36	46	1413
35°	3073	364	15	21	32	1877
45°	1752	44	6	12	19	1338
55°	43	6	3	7	11	128
65°	2	2	2	4	5	3
75°	1	1	2	3	2	1
85°	0	1	2	2	0	0
90°	0	0	0	0	0	



TEST NUMBER: P182838

CATALOG NUMBER: LDSQA4A09827D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	130.9	130.9	130.9	130.9	130.9	130.9	130.9	130.9	130.9	130.9	130.9
2.5°	195.6	191.5	187.3	184.7	182.1	185.7	183.1	182.1	174.8	171.1	168.0
5°	305.7	297.9	286.4	277.0	267.6	269.7	262.4	253.5	235.3	222.2	210.8
7.5°	590.0	570.7	535.3	500.8	466.4	460.1	437.2	397.5	346.4	307.8	274.4
10°	1194.2	1135.8	1070.5	1000.1	917.7	894.7	837.9	730.4	613.0	478.9	381.9
12.5°	1762.8	1736.2	1659.5	1568.2	1479.0	1424.3	1365.3	1187.9	1001.7	785.7	605.2
15°	2167.7	2151.5	2084.2	2001.3	1905.3	1869.8	1797.8	1620.9	1385.7	1127.4	865.5
17.5°	2467.7	2440.0	2369.6	2279.3	2165.6	2135.3	2049.3	1873.4	1629.3	1370.0	1079.4
20°	2704.0	2686.8	2595.5	2487.0	2350.8	2314.3	2213.6	2030.5	1764.9	1489.5	1193.7
22.5°	2916.3	2887.1	2775.0	2645.6	2490.1	2451.0	2338.8	2138.0	1852.6	1545.8	1214.0
25°	3120.3	3076.0	2939.8	2770.3	2587.7	2534.4	2411.3	2198.5	1884.9	1550.5	1191.1
27.5°	3179.8	3157.4	3031.6	2834.4	2623.1	2563.1	2434.8	2212.0	1872.9	1507.7	1108.6
30°	3170.4	3151.6	3046.8	2840.7	2616.9	2553.8	2423.3	2170.3	1803.0	1396.1	963.1
32.5°	3140.7	3133.4	3006.6	2786.4	2558.4	2489.6	2348.7	2066.5	1672.1	1226.0	703.8
35°	3073.4	3044.7	2886.6	2679.5	2460.4	2384.7	2225.6	1917.8	1499.4	892.6	363.6
37.5°	2876.2	2853.7	2729.0	2547.5	2334.1	2237.1	2069.1	1725.8	1160.8	507.6	217.6
40°	2631.0	2620.0	2521.9	2359.7	2131.7	2022.1	1839.5	1412.3	708.5	288.5	143.5
42.5°	2379.5	2376.4	2271.5	2102.0	1854.7	1728.9	1539.6	952.6	376.7	174.2	83.0
45°	1752.4	1771.2	1698.2	1596.4	1407.6	1316.3	1070.5	490.9	217.0	96.5	43.8
47.5°	1229.1	1208.3	1078.9	901.0	728.3	616.7	466.4	232.2	115.8	50.6	25.0
50°	695.4	699.1	582.2	471.1	308.8	244.7	185.7	116.9	55.8	26.6	15.1
52.5°	181.6	189.9	163.8	140.9	120.0	97.6	78.8	50.6	26.6	15.7	9.9
55°	42.8	44.3	41.2	38.6	36.5	32.3	28.7	21.9	14.6	9.9	6.3
57.5°	15.1	15.7	15.1	15.1	14.6	14.1	13.0	11.5	8.9	6.3	4.2
60°	6.8	7.3	6.8	7.3	7.3	7.3	7.3	7.3	5.2	3.7	2.6
62.5°	3.1	3.1	3.1	3.1	3.7	3.7	4.2	4.2	3.1	2.6	2.1
65°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.6
67.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
70°	1.6	1.6	1.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.6
72.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.0	1.0	1.0
80°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	1.0	1.0	1.0
85°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.0	1.0
87.5°	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	1.0	1.0	1.0
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: P182838

CATALOG NUMBER: LDSQA4A09827D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	130.9	130.9	130.9	130.9	130.9	130.9	130.9	130.9	130.9	130.9	130.9
2.5°	162.3	161.7	156.0	151.8	149.7	146.6	142.9	137.7	132.0	126.8	124.7
5°	197.2	190.4	178.4	168.5	163.8	159.1	150.8	141.4	132.5	123.1	118.4
7.5°	242.6	222.8	199.3	181.0	173.2	165.4	153.4	140.3	128.3	115.8	109.0
10°	304.7	258.8	218.1	188.9	177.4	166.9	149.7	133.6	120.5	106.9	98.1
12.5°	435.6	321.9	237.9	192.5	177.4	163.8	142.9	124.2	109.6	95.5	87.1
15°	627.6	434.6	281.2	196.2	173.7	156.5	132.5	112.2	96.5	84.0	76.2
17.5°	782.6	538.4	334.9	205.6	169.0	146.6	118.9	97.6	83.0	71.5	65.2
20°	860.8	582.2	359.5	207.1	157.6	130.9	102.8	82.4	69.4	59.5	54.3
22.5°	859.2	568.1	337.5	181.6	138.3	113.2	86.6	67.8	57.4	49.6	45.4
25°	805.0	502.9	281.7	145.0	111.6	93.9	70.4	54.8	46.4	40.7	37.0
27.5°	703.3	408.5	210.2	107.5	87.1	74.1	54.8	43.8	37.0	32.9	30.3
30°	552.0	273.4	132.5	79.8	66.3	55.8	42.3	33.9	29.2	25.6	24.0
32.5°	304.2	142.4	89.2	58.4	48.5	40.7	31.3	24.5	21.4	18.8	18.3
35°	168.0	100.7	63.6	39.1	32.3	27.7	21.4	17.7	15.7	14.6	14.6
37.5°	118.9	64.7	38.1	24.5	20.9	18.3	14.6	12.5	12.0	11.5	11.5
40°	71.5	38.1	23.0	16.2	14.1	12.5	11.0	9.4	9.4	8.9	9.4
42.5°	39.1	23.0	15.7	11.5	9.9	9.4	7.8	7.3	7.3	7.3	7.8
45°	23.5	15.1	11.0	8.3	7.3	6.3	5.7	5.2	5.7	5.7	6.3
47.5°	15.1	11.0	7.3	5.2	4.7	4.2	3.7	4.2	4.2	4.7	5.2
50°	10.4	6.8	4.7	3.1	3.1	2.6	3.1	3.1	3.7	4.2	4.7
52.5°	6.8	4.7	3.1	2.6	2.1	2.1	2.1	2.6	3.1	3.7	4.2
55°	4.2	3.1	2.6	2.1	2.1	2.1	2.1	2.1	2.6	3.1	3.7
57.5°	3.1	2.6	2.1	1.6	1.6	1.6	2.1	2.1	2.6	2.6	3.1
60°	2.1	2.1	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.6	3.1
62.5°	2.1	2.1	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.6	2.6
65°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.6
67.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.6
70°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.6
72.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.1
77.5°	1.0	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.1
80°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.1
82.5°	1.0	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.1
85°	1.0	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1	2.1
87.5°	1.0	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.1	2.1	2.1
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: P182838

CATALOG NUMBER: LDSQA4A09827D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	130.9	130.9	130.9	130.9	130.9	130.9	130.9	130.9	130.9	130.9	130.9
2.5°	122.1	118.4	115.3	116.3	114.3	110.6	109.6	106.9	103.8	103.3	103.3
5°	113.2	107.5	102.8	102.3	100.2	96.0	95.0	92.3	89.7	89.2	88.7
7.5°	102.3	96.0	91.8	90.8	89.2	85.6	85.0	82.4	80.9	79.8	79.8
10°	91.3	85.6	81.9	81.4	80.3	77.2	76.7	74.6	73.0	72.5	72.0
12.5°	80.9	76.2	73.0	72.5	71.5	68.9	68.3	66.8	65.7	65.2	65.2
15°	71.0	66.8	64.2	63.6	63.1	60.5	60.5	59.5	59.0	59.0	59.5
17.5°	61.0	57.4	55.3	54.8	54.8	52.7	53.2	52.7	52.7	52.7	53.7
20°	51.1	48.0	46.4	47.0	45.9	45.4	45.9	45.9	45.9	47.0	48.5
22.5°	42.8	40.2	38.6	39.1	39.1	38.6	39.1	39.6	40.7	42.3	43.8
25°	35.0	32.9	32.3	32.9	32.9	32.9	33.9	35.0	36.0	37.6	39.1
27.5°	28.2	26.6	26.6	27.1	27.7	27.7	29.2	30.3	31.8	33.4	35.0
30°	22.4	21.9	21.9	23.0	23.0	23.5	25.6	26.6	27.7	29.2	30.8
32.5°	17.7	17.7	18.3	19.3	19.3	20.3	21.9	23.0	24.0	25.6	27.1
35°	14.6	15.1	15.7	16.2	16.7	17.2	18.8	19.8	20.9	22.4	23.5
37.5°	12.0	12.5	13.0	14.1	14.1	14.6	16.2	17.2	17.7	19.3	20.9
40°	9.9	10.4	11.0	12.0	12.0	12.5	14.1	14.6	15.1	16.7	18.3
42.5°	8.3	8.9	9.4	9.9	10.4	11.0	12.0	12.5	13.6	14.6	15.7
45°	6.8	7.3	7.8	8.3	8.9	9.4	9.9	11.0	11.5	12.5	13.6
47.5°	5.7	6.3	6.8	7.3	7.8	7.8	8.9	9.4	9.9	11.0	12.0
50°	5.2	5.7	6.3	6.3	6.8	7.3	7.8	8.3	8.9	9.4	10.4
52.5°	4.2	4.7	5.2	5.7	5.7	6.3	6.8	7.3	7.8	8.3	8.9
55°	4.2	4.2	4.7	5.2	5.2	5.7	6.3	6.8	6.8	7.3	7.8
57.5°	3.7	4.2	4.2	4.7	4.7	5.2	5.7	5.7	6.3	6.3	6.8
60°	3.1	3.7	4.2	4.2	4.2	4.7	4.7	5.2	5.2	5.7	5.7
62.5°	3.1	3.7	3.7	4.2	4.2	4.2	4.7	4.7	4.7	5.2	5.2
65°	3.1	3.1	3.7	3.7	3.7	3.7	4.2	4.2	4.2	4.7	4.7
67.5°	2.6	3.1	3.1	3.1	3.7	3.7	3.7	3.7	3.7	4.2	4.2
70°	2.6	2.6	3.1	3.1	3.1	3.1	3.1	3.7	3.7	3.7	3.7
72.5°	2.6	2.6	2.6	2.6	3.1	3.1	3.1	3.1	3.1	3.1	3.1
75°	2.1	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
77.5°	2.1	2.1	2.1	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
80°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
82.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.6	1.6
85°	2.1	2.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
87.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.0	1.0	1.0
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: P182838

CATALOG NUMBER: LDSQA4A09827D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	130.9	130.9	130.9	130.9	130.9	130.9	130.9	130.9
2.5°	101.2	100.2	99.6	101.2	99.1	100.2	99.6	100.2
5°	87.1	86.1	85.6	87.1	85.0	86.1	85.0	86.1
7.5°	78.3	77.7	77.2	78.3	76.7	77.7	77.2	77.7
10°	71.0	70.4	69.9	71.5	69.9	71.0	70.4	71.0
12.5°	64.7	64.7	64.2	65.2	64.2	65.2	64.7	65.2
15°	59.0	59.5	59.0	60.0	59.5	60.5	60.0	61.0
17.5°	54.3	54.8	54.8	56.3	55.8	57.4	56.9	57.4
20°	49.6	50.1	50.6	51.6	51.6	53.2	52.7	53.7
22.5°	44.9	45.9	45.9	47.5	47.5	49.0	49.0	49.6
25°	40.2	41.7	42.3	43.3	43.8	45.4	45.4	45.9
27.5°	36.5	37.6	38.1	39.6	40.2	41.7	41.7	42.8
30°	32.3	33.9	34.4	35.5	36.0	37.6	37.6	38.6
32.5°	28.7	29.7	30.8	31.8	32.3	33.9	33.9	35.0
35°	25.0	26.6	27.1	28.2	29.2	30.8	30.8	31.8
37.5°	21.9	23.5	24.0	25.0	26.1	27.7	27.7	28.7
40°	19.3	20.9	21.4	22.4	23.0	25.0	25.0	25.6
42.5°	17.2	18.3	18.8	19.8	20.3	21.4	21.4	22.4
45°	14.6	15.7	16.2	16.7	17.7	18.8	18.8	19.3
47.5°	12.5	13.6	14.1	14.6	15.1	16.2	16.2	17.2
50°	11.0	11.5	12.0	12.5	13.0	14.1	14.1	14.6
52.5°	9.4	9.9	10.4	11.0	11.5	12.0	12.5	13.0
55°	8.3	8.9	8.9	9.4	9.9	10.4	10.4	11.0
57.5°	7.3	7.8	7.8	7.8	8.3	8.9	8.9	9.4
60°	6.3	6.8	6.8	6.8	7.3	7.3	7.3	7.8
62.5°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
65°	4.7	4.7	4.7	4.7	4.7	4.7	4.2	4.7
67.5°	4.2	4.2	4.2	3.7	3.7	3.7	3.7	3.7
70°	3.7	3.7	3.7	3.1	3.1	3.1	2.6	2.6
72.5°	3.1	3.1	3.1	2.6	2.6	2.6	2.1	2.1
75°	2.6	2.6	2.6	2.6	2.1	2.1	2.1	2.1
77.5°	2.1	2.1	2.1	2.1	2.1	2.1	1.6	1.6
80°	2.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6
82.5°	1.6	1.6	1.6	1.6	1.0	1.0	1.0	1.0
85°	1.0	1.0	1.0	1.0	1.0	1.0	0.5	0.5
87.5°	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5
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)