

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: P182852

Luminaire Tested: **LDSQA4A13935D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182852
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: LDSQA4A13935D010TE LAR35FL 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 35° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1329.7 lumens
Efficiency: N/A
Efficacy: 59.7 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

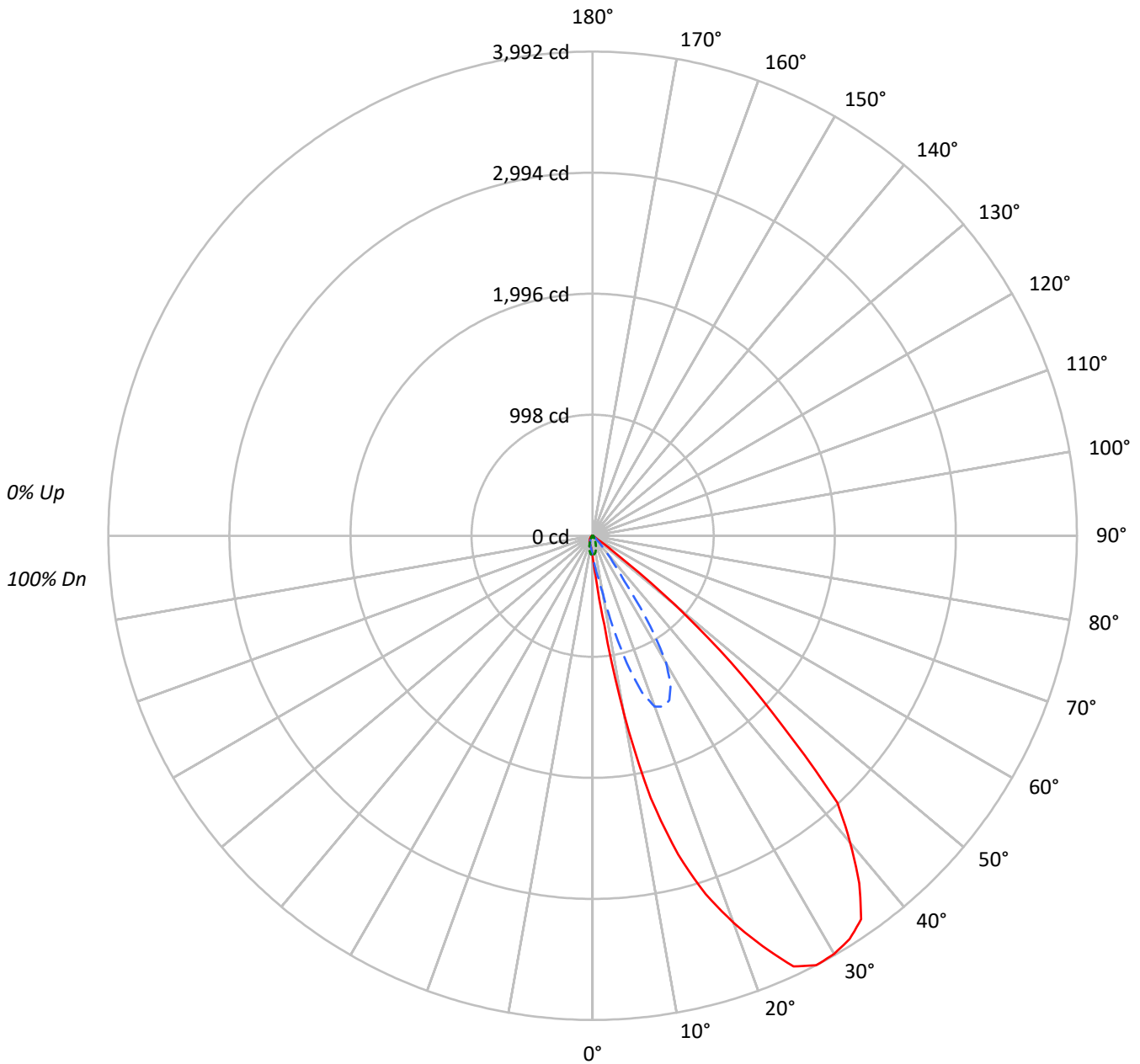
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	15926	15926	15926
5°	37323	15034	10512
10°	147486	13211	8765
15°	272957	10581	7682
20°	350000	7701	6959
25°	418764	5462	6157
30°	445278	3591	5425
35°	456342	2164	4731
40°	417742	1404	4059
45°	301433	986	3315
50°	131586	784	2758
55°	9070	659	2331
60°	1647	639	1899
65°	596	596	1352
70°	566	736	935
75°	487	973	973
80°	0	1450	1116
85°	0	2890	778



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.0	1.8
10°-20°	188.2	14.2
20°-30°	394.0	29.6
30°-40°	438.6	33.0
40°-50°	251.8	18.9
50°-60°	25.1	1.9
60°-70°	3.9	0.3
70°-80°	2.5	0.2
80°-90°	1.5	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°	606.2	45.6
0°-40°	1044.8	78.6
0°-60°	1321.7	99.4
0°-90°	1329.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1329.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	164	164	164	164	164	
5°	384	265	155	113	108	70
15°	2722	1087	106	74	77	769
25°	3918	1495	51	45	58	1774
35°	3859	456	18	26	40	2356
45°	2200	55	7	14	24	1680
55°	54	8	4	8	14	160
65°	3	2	3	5	6	3
75°	1	1	3	3	3	1
85°	0	1	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°	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4
2.5°	245.6	240.4	235.2	231.9	228.6	233.2	229.9	228.6	219.4	214.8	210.9
5°	383.8	374.0	359.6	347.8	336.0	338.6	329.5	318.3	295.4	279.0	264.6
7.5°	740.8	716.6	672.1	628.8	585.6	577.7	548.9	499.1	434.9	386.5	344.5
10°	1499.3	1426.0	1344.1	1255.7	1152.2	1123.4	1052.0	917.0	769.6	601.3	479.5
12.5°	2213.3	2179.9	2083.6	1969.0	1857.0	1788.2	1714.2	1491.5	1257.6	986.5	759.8
15°	2721.6	2701.3	2616.8	2512.7	2392.1	2347.6	2257.2	2035.1	1739.7	1415.5	1086.7
17.5°	3098.2	3063.5	2975.1	2861.8	2719.0	2681.0	2572.9	2352.2	2045.6	1720.1	1355.2
20°	3395.0	3373.4	3258.7	3122.5	2951.5	2905.7	2779.3	2549.3	2215.9	1870.1	1498.7
22.5°	3661.6	3624.9	3484.1	3321.6	3126.4	3077.3	2936.5	2684.3	2326.0	1940.8	1524.2
25°	3917.7	3862.0	3691.0	3478.2	3248.9	3182.1	3027.5	2760.3	2366.6	1946.7	1495.4
27.5°	3992.3	3964.2	3806.3	3558.7	3293.4	3218.1	3057.0	2777.3	2351.5	1893.0	1391.9
30°	3980.6	3957.0	3825.3	3566.6	3285.6	3206.3	3042.6	2724.9	2263.7	1752.8	1209.2
32.5°	3943.2	3934.1	3774.9	3498.5	3212.2	3125.8	2948.9	2594.5	2099.3	1539.3	883.6
35°	3858.7	3822.7	3624.2	3364.2	3089.1	2994.1	2794.3	2407.9	1882.5	1120.7	456.5
37.5°	3611.1	3583.0	3426.4	3198.5	2930.6	2808.7	2597.8	2166.8	1457.4	637.3	273.1
40°	3303.3	3289.5	3166.4	2962.7	2676.4	2538.9	2309.6	1773.1	889.5	362.2	180.1
42.5°	2987.5	2983.6	2852.0	2639.1	2328.6	2170.7	1933.0	1196.1	472.9	218.8	104.1
45°	2200.2	2223.8	2132.1	2004.4	1767.2	1652.6	1344.1	616.4	272.5	121.2	55.0
47.5°	1543.2	1517.0	1354.6	1131.2	914.4	774.2	585.6	291.5	145.4	63.5	31.4
50°	873.1	877.7	731.0	591.5	387.8	307.2	233.2	146.7	70.1	33.4	19.0
52.5°	227.9	238.4	205.7	176.9	150.7	122.5	98.9	63.5	33.4	19.7	12.4
55°	53.7	55.7	51.7	48.5	45.9	40.6	36.0	27.5	18.3	12.4	7.9
57.5°	19.0	19.7	19.0	19.0	18.3	17.7	16.4	14.4	11.1	7.9	5.2
60°	8.5	9.2	8.5	9.2	9.2	9.2	9.2	9.2	6.6	4.6	3.3
62.5°	3.9	3.9	3.9	3.9	4.6	4.6	5.2	5.2	3.9	3.3	2.6
65°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.0
67.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
70°	2.0	2.0	2.0	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.0
72.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
75°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
77.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.3	1.3	1.3	1.3
80°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.3	1.3	1.3
82.5°	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	1.3	1.3	1.3
85°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.3	1.3	1.3
87.5°	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	1.3	1.3	1.3
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°	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4
2.5°	203.7	203.1	195.9	190.6	188.0	184.1	179.5	172.9	165.7	159.2	156.5
5°	247.6	239.1	224.0	211.6	205.7	199.8	189.3	177.5	166.4	154.6	148.7
7.5°	304.6	279.7	250.2	227.3	217.5	207.6	192.6	176.2	161.1	145.4	136.9
10°	382.5	324.9	273.8	237.1	222.7	209.6	188.0	167.7	151.3	134.3	123.1
12.5°	546.9	404.1	298.7	241.7	222.7	205.7	179.5	155.9	137.6	119.9	109.4
15°	788.0	545.6	353.1	246.3	218.1	196.5	166.4	140.8	121.2	105.5	95.6
17.5°	982.5	676.0	420.5	258.1	212.2	184.1	149.3	122.5	104.1	89.7	81.9
20°	1080.8	731.0	451.3	260.0	197.8	164.4	129.0	103.5	87.1	74.7	68.1
22.5°	1078.8	713.3	423.8	227.9	173.6	142.1	108.7	85.2	72.1	62.2	57.0
25°	1010.7	631.4	353.7	182.1	140.2	117.9	88.4	68.8	58.3	51.1	46.5
27.5°	883.0	512.9	264.0	134.9	109.4	93.0	68.8	55.0	46.5	41.3	38.0
30°	693.0	343.2	166.4	100.2	83.2	70.1	53.1	42.6	36.7	32.1	30.1
32.5°	381.9	178.8	112.0	73.4	60.9	51.1	39.3	30.8	26.9	23.6	22.9
35°	210.9	126.4	79.9	49.1	40.6	34.7	26.9	22.3	19.7	18.3	18.3
37.5°	149.3	81.2	47.8	30.8	26.2	22.9	18.3	15.7	15.1	14.4	14.4
40°	89.7	47.8	28.8	20.3	17.7	15.7	13.8	11.8	11.8	11.1	11.8
42.5°	49.1	28.8	19.7	14.4	12.4	11.8	9.8	9.2	9.2	9.2	9.8
45°	29.5	19.0	13.8	10.5	9.2	7.9	7.2	6.6	7.2	7.2	7.9
47.5°	19.0	13.8	9.2	6.6	5.9	5.2	4.6	5.2	5.2	5.9	6.6
50°	13.1	8.5	5.9	3.9	3.9	3.3	3.9	3.9	4.6	5.2	5.9
52.5°	8.5	5.9	3.9	3.3	2.6	2.6	2.6	3.3	3.9	4.6	5.2
55°	5.2	3.9	3.3	2.6	2.6	2.6	2.6	2.6	3.3	3.9	4.6
57.5°	3.9	3.3	2.6	2.0	2.0	2.0	2.6	2.6	3.3	3.3	3.9
60°	2.6	2.6	2.0	2.0	2.0	2.0	2.0	2.6	2.6	3.3	3.9
62.5°	2.6	2.6	2.0	2.0	2.0	2.0	2.6	2.6	2.6	3.3	3.3
65°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	3.3
67.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	3.3
70°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	3.3
72.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6
75°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6
77.5°	1.3	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6
82.5°	1.3	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6
85°	1.3	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6
87.5°	1.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4
2.5°	153.3	148.7	144.8	146.1	143.4	138.9	137.6	134.3	130.3	129.7	129.7
5°	142.1	134.9	129.0	128.4	125.8	120.5	119.2	115.9	112.7	112.0	111.4
7.5°	128.4	120.5	115.3	114.0	112.0	107.4	106.8	103.5	101.5	100.2	100.2
10°	114.6	107.4	102.8	102.2	100.9	96.9	96.3	93.7	91.7	91.0	90.4
12.5°	101.5	95.6	91.7	91.0	89.7	86.5	85.8	83.8	82.5	81.9	81.9
15°	89.1	83.8	80.6	79.9	79.3	76.0	76.0	74.7	74.0	74.0	74.7
17.5°	76.6	72.1	69.4	68.8	68.8	66.2	66.8	66.2	66.2	66.2	67.5
20°	64.2	60.3	58.3	59.0	57.6	57.0	57.6	57.6	57.6	59.0	60.9
22.5°	53.7	50.4	48.5	49.1	49.1	48.5	49.1	49.8	51.1	53.1	55.0
25°	43.9	41.3	40.6	41.3	41.3	41.3	42.6	43.9	45.2	47.2	49.1
27.5°	35.4	33.4	33.4	34.1	34.7	34.7	36.7	38.0	40.0	41.9	43.9
30°	28.2	27.5	27.5	28.8	28.8	29.5	32.1	33.4	34.7	36.7	38.6
32.5°	22.3	22.3	22.9	24.2	24.2	25.5	27.5	28.8	30.1	32.1	34.1
35°	18.3	19.0	19.7	20.3	21.0	21.6	23.6	24.9	26.2	28.2	29.5
37.5°	15.1	15.7	16.4	17.7	17.7	18.3	20.3	21.6	22.3	24.2	26.2
40°	12.4	13.1	13.8	15.1	15.1	15.7	17.7	18.3	19.0	21.0	22.9
42.5°	10.5	11.1	11.8	12.4	13.1	13.8	15.1	15.7	17.0	18.3	19.7
45°	8.5	9.2	9.8	10.5	11.1	11.8	12.4	13.8	14.4	15.7	17.0
47.5°	7.2	7.9	8.5	9.2	9.8	9.8	11.1	11.8	12.4	13.8	15.1
50°	6.6	7.2	7.9	7.9	8.5	9.2	9.8	10.5	11.1	11.8	13.1
52.5°	5.2	5.9	6.6	7.2	7.2	7.9	8.5	9.2	9.8	10.5	11.1
55°	5.2	5.2	5.9	6.6	6.6	7.2	7.9	8.5	8.5	9.2	9.8
57.5°	4.6	5.2	5.2	5.9	5.9	6.6	7.2	7.2	7.9	7.9	8.5
60°	3.9	4.6	5.2	5.2	5.2	5.9	5.9	6.6	6.6	7.2	7.2
62.5°	3.9	4.6	4.6	5.2	5.2	5.2	5.9	5.9	5.9	6.6	6.6
65°	3.9	3.9	4.6	4.6	4.6	4.6	5.2	5.2	5.2	5.9	5.9
67.5°	3.3	3.9	3.9	3.9	4.6	4.6	4.6	4.6	4.6	5.2	5.2
70°	3.3	3.3	3.9	3.9	3.9	3.9	3.9	4.6	4.6	4.6	4.6
72.5°	3.3	3.3	3.3	3.3	3.9	3.9	3.9	3.9	3.9	3.9	3.9
75°	2.6	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
77.5°	2.6	2.6	2.6	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
80°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
82.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.0	2.0
85°	2.6	2.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
87.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.3	1.3	1.3
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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CATALOG NUMBER: LDSQA4A13935D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	164.4	164.4	164.4	164.4	164.4	164.4	164.4	164.4
2.5°	127.1	125.8	125.1	127.1	124.5	125.8	125.1	125.8
5°	109.4	108.1	107.4	109.4	106.8	108.1	106.8	108.1
7.5°	98.3	97.6	96.9	98.3	96.3	97.6	96.9	97.6
10°	89.1	88.4	87.8	89.7	87.8	89.1	88.4	89.1
12.5°	81.2	81.2	80.6	81.9	80.6	81.9	81.2	81.9
15°	74.0	74.7	74.0	75.3	74.7	76.0	75.3	76.6
17.5°	68.1	68.8	68.8	70.7	70.1	72.1	71.4	72.1
20°	62.2	62.9	63.5	64.8	64.8	66.8	66.2	67.5
22.5°	56.3	57.6	57.6	59.6	59.6	61.6	61.6	62.2
25°	50.4	52.4	53.1	54.4	55.0	57.0	57.0	57.6
27.5°	45.9	47.2	47.8	49.8	50.4	52.4	52.4	53.7
30°	40.6	42.6	43.2	44.5	45.2	47.2	47.2	48.5
32.5°	36.0	37.3	38.6	40.0	40.6	42.6	42.6	43.9
35°	31.4	33.4	34.1	35.4	36.7	38.6	38.6	40.0
37.5°	27.5	29.5	30.1	31.4	32.8	34.7	34.7	36.0
40°	24.2	26.2	26.9	28.2	28.8	31.4	31.4	32.1
42.5°	21.6	22.9	23.6	24.9	25.5	26.9	26.9	28.2
45°	18.3	19.7	20.3	21.0	22.3	23.6	23.6	24.2
47.5°	15.7	17.0	17.7	18.3	19.0	20.3	20.3	21.6
50°	13.8	14.4	15.1	15.7	16.4	17.7	17.7	18.3
52.5°	11.8	12.4	13.1	13.8	14.4	15.1	15.7	16.4
55°	10.5	11.1	11.1	11.8	12.4	13.1	13.1	13.8
57.5°	9.2	9.8	9.8	9.8	10.5	11.1	11.1	11.8
60°	7.9	8.5	8.5	8.5	9.2	9.2	9.2	9.8
62.5°	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
65°	5.9	5.9	5.9	5.9	5.9	5.9	5.2	5.9
67.5°	5.2	5.2	5.2	4.6	4.6	4.6	4.6	4.6
70°	4.6	4.6	4.6	3.9	3.9	3.9	3.3	3.3
72.5°	3.9	3.9	3.9	3.3	3.3	3.3	2.6	2.6
75°	3.3	3.3	3.3	3.3	2.6	2.6	2.6	2.6
77.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.0	2.0
80°	2.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	2.0	2.0	2.0	1.3	1.3	1.3	1.3
85°	1.3	1.3	1.3	1.3	1.3	1.3	0.7	0.7
87.5°	1.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7
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)