

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: P182851

Luminaire Tested: **LDSQA4A13930D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182851
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: LDSQA4A13930D010TE LAR35FL 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 35° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1316.9 lumens
Efficiency: N/A
Efficacy: 59.1 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

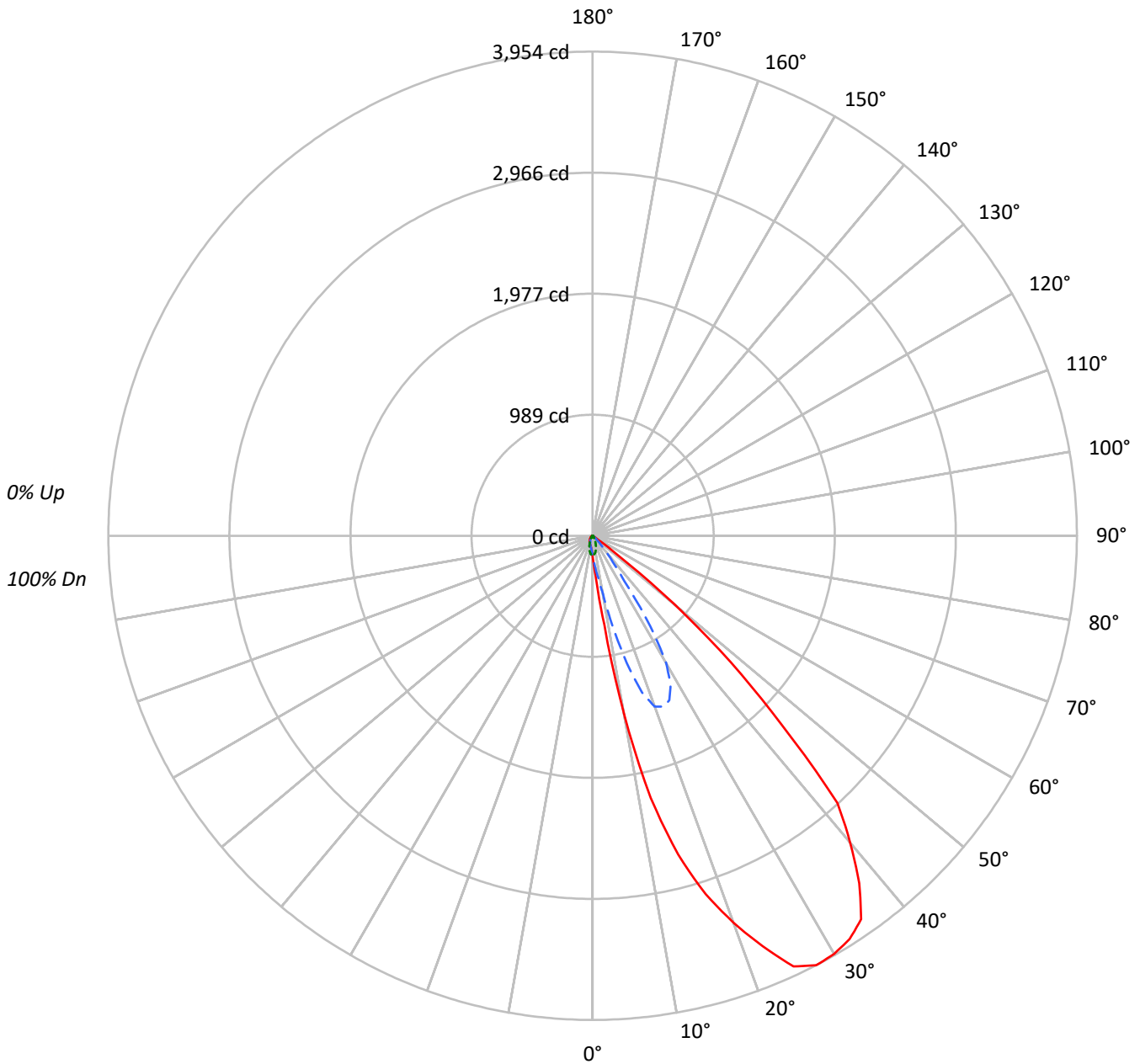
Input Watts (W): 22.27
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	15771	15771	15771
5°	36973	14888	10415
10°	146089	13083	8676
15°	270359	10481	7612
20°	346670	7629	6887
25°	414777	5409	6103
30°	441039	3557	5369
35°	452013	2152	4683
40°	413771	1391	4021
45°	298570	973	3288
50°	130335	784	2743
55°	8985	659	2297
60°	1628	620	1879
65°	596	596	1330
70°	538	736	906
75°	487	973	973
80°	0	1450	1060
85°	0	2890	667



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	23.7	1.8
10°-20°	186.4	14.2
20°-30°	390.3	29.6
30°-40°	434.4	33.0
40°-50°	249.4	18.9
50°-60°	24.9	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°	600.4	45.6
0°-40°	1034.8	78.6
0°-60°	1309.1	99.4
0°-90°	1316.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1316.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	163	163	163	163	163	
5°	380	262	153	112	107	70
15°	2696	1076	104	73	76	762
25°	3880	1481	51	45	57	1757
35°	3822	452	18	26	40	2334
45°	2179	54	7	14	24	1664
55°	53	8	4	8	14	159
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°	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8
2.5°	243.3	238.1	232.9	229.7	226.4	231.0	227.7	226.4	217.3	212.8	208.9
5°	380.2	370.5	356.2	344.5	332.8	335.4	326.3	315.3	292.6	276.4	262.1
7.5°	733.8	709.8	665.7	622.8	580.0	572.2	543.7	494.4	430.8	382.8	341.3
10°	1485.1	1412.4	1331.3	1243.7	1141.2	1112.7	1042.0	908.3	762.3	595.6	474.9
12.5°	2192.3	2159.2	2063.8	1950.3	1839.3	1771.2	1697.9	1477.3	1245.7	977.1	752.6
15°	2695.7	2675.6	2591.9	2488.8	2369.4	2325.3	2235.7	2015.8	1723.2	1402.0	1076.4
17.5°	3068.8	3034.4	2946.8	2834.6	2693.1	2655.5	2548.5	2329.8	2026.2	1703.7	1342.4
20°	3362.7	3341.3	3227.8	3092.8	2923.5	2878.1	2752.8	2525.1	2194.9	1852.3	1484.4
22.5°	3626.8	3590.4	3450.9	3290.0	3096.7	3048.0	2908.5	2658.8	2303.9	1922.4	1509.7
25°	3880.4	3825.3	3656.0	3445.1	3218.0	3151.8	2998.7	2734.0	2344.1	1928.2	1481.2
27.5°	3954.4	3926.5	3770.1	3524.9	3262.1	3187.5	3027.9	2750.9	2329.2	1875.0	1378.7
30°	3942.7	3919.4	3789.0	3532.7	3254.4	3175.9	3013.7	2699.0	2242.2	1736.2	1197.7
32.5°	3905.7	3896.7	3739.0	3465.2	3181.7	3096.1	2920.9	2569.9	2079.4	1524.7	875.2
35°	3822.1	3786.4	3589.8	3332.2	3059.7	2965.6	2767.8	2385.0	1864.6	1110.1	452.2
37.5°	3576.8	3548.9	3393.8	3168.1	2902.7	2782.0	2573.1	2146.2	1443.6	631.3	270.5
40°	3271.9	3258.2	3136.3	2934.5	2651.0	2514.7	2287.7	1756.3	881.1	358.8	178.4
42.5°	2959.2	2955.3	2824.9	2614.0	2306.5	2150.1	1914.6	1184.7	468.4	216.7	103.2
45°	2179.3	2202.7	2111.8	1985.3	1750.4	1636.9	1331.3	610.5	269.9	120.0	54.5
47.5°	1528.6	1502.6	1341.7	1120.5	905.7	766.9	580.0	288.7	144.0	62.9	31.1
50°	864.8	869.4	724.1	585.9	384.1	304.3	231.0	145.3	69.4	33.1	18.8
52.5°	225.8	236.2	203.7	175.2	149.2	121.3	98.0	62.9	33.1	19.5	12.3
55°	53.2	55.1	51.3	48.0	45.4	40.2	35.7	27.2	18.2	12.3	7.8
57.5°	18.8	19.5	18.8	18.8	18.2	17.5	16.2	14.3	11.0	7.8	5.2
60°	8.4	9.1	8.4	9.1	9.1	9.1	9.1	9.1	6.5	4.5	3.2
62.5°	3.9	3.9	3.9	3.9	4.5	4.5	5.2	5.2	3.9	3.2	2.6
65°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.9
67.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
70°	1.9	1.9	1.9	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.9
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	0.6	0.6	0.6	0.6	1.3	1.3	1.3	1.3
80°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	1.3	1.3	1.3
82.5°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	1.3	1.3	1.3
85°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.3	1.3	1.3
87.5°	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	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°	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8
2.5°	201.8	201.1	194.0	188.8	186.2	182.3	177.8	171.3	164.1	157.7	155.1
5°	245.2	236.8	221.9	209.6	203.7	197.9	187.5	175.8	164.8	153.1	147.3
7.5°	301.7	277.0	247.8	225.1	215.4	205.7	190.7	174.5	159.6	144.0	135.6
10°	378.9	321.8	271.2	234.9	220.6	207.6	186.2	166.1	149.9	133.0	122.0
12.5°	541.7	400.3	295.9	239.4	220.6	203.7	177.8	154.4	136.2	118.7	108.3
15°	780.5	540.4	349.7	243.9	216.0	194.6	164.8	139.5	120.0	104.5	94.7
17.5°	973.2	669.6	416.5	255.6	210.2	182.3	147.9	121.3	103.2	88.9	81.1
20°	1070.5	724.1	447.0	257.6	195.9	162.8	127.8	102.5	86.3	74.0	67.5
22.5°	1068.6	706.5	419.8	225.8	171.9	140.8	107.7	84.3	71.4	61.6	56.4
25°	1001.1	625.4	350.3	180.4	138.8	116.8	87.6	68.1	57.7	50.6	46.1
27.5°	874.6	508.0	261.5	133.7	108.3	92.1	68.1	54.5	46.1	40.9	37.6
30°	686.4	340.0	164.8	99.3	82.4	69.4	52.6	42.2	36.3	31.8	29.8
32.5°	378.2	177.1	110.9	72.7	60.3	50.6	38.9	30.5	26.6	23.4	22.7
35°	208.9	125.2	79.2	48.7	40.2	34.4	26.6	22.1	19.5	18.2	18.2
37.5°	147.9	80.5	47.4	30.5	26.0	22.7	18.2	15.6	14.9	14.3	14.3
40°	88.9	47.4	28.5	20.1	17.5	15.6	13.6	11.7	11.7	11.0	11.7
42.5°	48.7	28.5	19.5	14.3	12.3	11.7	9.7	9.1	9.1	9.1	9.7
45°	29.2	18.8	13.6	10.4	9.1	7.8	7.1	6.5	7.1	7.1	7.8
47.5°	18.8	13.6	9.1	6.5	5.8	5.2	4.5	5.2	5.2	5.8	6.5
50°	13.0	8.4	5.8	3.9	3.9	3.2	3.9	3.9	4.5	5.2	5.8
52.5°	8.4	5.8	3.9	3.2	2.6	2.6	2.6	3.2	3.9	4.5	5.2
55°	5.2	3.9	3.2	2.6	2.6	2.6	2.6	2.6	3.2	3.9	4.5
57.5°	3.9	3.2	2.6	1.9	1.9	1.9	2.6	2.6	3.2	3.2	3.9
60°	2.6	2.6	1.9	1.9	1.9	1.9	1.9	2.6	2.6	3.2	3.9
62.5°	2.6	2.6	1.9	1.9	1.9	1.9	2.6	2.6	2.6	3.2	3.2
65°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.6	2.6	3.2
67.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.6	3.2
70°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.6	3.2
72.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.6	2.6
75°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.6	2.6	2.6
77.5°	1.3	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.6	2.6	2.6
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.6	2.6	2.6
82.5°	1.3	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.6	2.6	2.6
85°	1.3	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.6	2.6	2.6
87.5°	1.3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	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°	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8
2.5°	151.8	147.3	143.4	144.7	142.1	137.5	136.2	133.0	129.1	128.5	128.5
5°	140.8	133.7	127.8	127.2	124.6	119.4	118.1	114.8	111.6	110.9	110.3
7.5°	127.2	119.4	114.2	112.9	110.9	106.4	105.8	102.5	100.6	99.3	99.3
10°	113.5	106.4	101.9	101.2	99.9	96.0	95.4	92.8	90.8	90.2	89.5
12.5°	100.6	94.7	90.8	90.2	88.9	85.6	85.0	83.0	81.7	81.1	81.1
15°	88.2	83.0	79.8	79.2	78.5	75.3	75.3	74.0	73.3	73.3	74.0
17.5°	75.9	71.4	68.8	68.1	68.1	65.5	66.2	65.5	65.5	65.5	66.8
20°	63.6	59.7	57.7	58.4	57.1	56.4	57.1	57.1	57.1	58.4	60.3
22.5°	53.2	50.0	48.0	48.7	48.7	48.0	48.7	49.3	50.6	52.6	54.5
25°	43.5	40.9	40.2	40.9	40.9	40.9	42.2	43.5	44.8	46.7	48.7
27.5°	35.0	33.1	33.1	33.7	34.4	34.4	36.3	37.6	39.6	41.5	43.5
30°	27.9	27.2	27.2	28.5	28.5	29.2	31.8	33.1	34.4	36.3	38.3
32.5°	22.1	22.1	22.7	24.0	24.0	25.3	27.2	28.5	29.8	31.8	33.7
35°	18.2	18.8	19.5	20.1	20.8	21.4	23.4	24.7	26.0	27.9	29.2
37.5°	14.9	15.6	16.2	17.5	17.5	18.2	20.1	21.4	22.1	24.0	26.0
40°	12.3	13.0	13.6	14.9	14.9	15.6	17.5	18.2	18.8	20.8	22.7
42.5°	10.4	11.0	11.7	12.3	13.0	13.6	14.9	15.6	16.9	18.2	19.5
45°	8.4	9.1	9.7	10.4	11.0	11.7	12.3	13.6	14.3	15.6	16.9
47.5°	7.1	7.8	8.4	9.1	9.7	9.7	11.0	11.7	12.3	13.6	14.9
50°	6.5	7.1	7.8	7.8	8.4	9.1	9.7	10.4	11.0	11.7	13.0
52.5°	5.2	5.8	6.5	7.1	7.1	7.8	8.4	9.1	9.7	10.4	11.0
55°	5.2	5.2	5.8	6.5	6.5	7.1	7.8	8.4	8.4	9.1	9.7
57.5°	4.5	5.2	5.2	5.8	5.8	6.5	7.1	7.1	7.8	7.8	8.4
60°	3.9	4.5	5.2	5.2	5.2	5.8	5.8	6.5	6.5	7.1	7.1
62.5°	3.9	4.5	4.5	5.2	5.2	5.2	5.8	5.8	5.8	6.5	6.5
65°	3.9	3.9	4.5	4.5	4.5	4.5	5.2	5.2	5.2	5.8	5.8
67.5°	3.2	3.9	3.9	3.9	4.5	4.5	4.5	4.5	4.5	5.2	5.2
70°	3.2	3.2	3.9	3.9	3.9	3.9	3.9	4.5	4.5	4.5	4.5
72.5°	3.2	3.2	3.2	3.2	3.9	3.9	3.9	3.9	3.9	3.9	3.9
75°	2.6	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
77.5°	2.6	2.6	2.6	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
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	1.9	1.9
85°	2.6	2.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
87.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	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: LDSQA4A13930D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	162.8	162.8	162.8	162.8	162.8	162.8	162.8	162.8
2.5°	125.9	124.6	123.9	125.9	123.3	124.6	123.9	124.6
5°	108.3	107.1	106.4	108.3	105.8	107.1	105.8	107.1
7.5°	97.3	96.7	96.0	97.3	95.4	96.7	96.0	96.7
10°	88.2	87.6	86.9	88.9	86.9	88.2	87.6	88.2
12.5°	80.5	80.5	79.8	81.1	79.8	81.1	80.5	81.1
15°	73.3	74.0	73.3	74.6	74.0	75.3	74.6	75.9
17.5°	67.5	68.1	68.1	70.1	69.4	71.4	70.7	71.4
20°	61.6	62.3	62.9	64.2	64.2	66.2	65.5	66.8
22.5°	55.8	57.1	57.1	59.0	59.0	61.0	61.0	61.6
25°	50.0	51.9	52.6	53.8	54.5	56.4	56.4	57.1
27.5°	45.4	46.7	47.4	49.3	50.0	51.9	51.9	53.2
30°	40.2	42.2	42.8	44.1	44.8	46.7	46.7	48.0
32.5°	35.7	37.0	38.3	39.6	40.2	42.2	42.2	43.5
35°	31.1	33.1	33.7	35.0	36.3	38.3	38.3	39.6
37.5°	27.2	29.2	29.8	31.1	32.4	34.4	34.4	35.7
40°	24.0	26.0	26.6	27.9	28.5	31.1	31.1	31.8
42.5°	21.4	22.7	23.4	24.7	25.3	26.6	26.6	27.9
45°	18.2	19.5	20.1	20.8	22.1	23.4	23.4	24.0
47.5°	15.6	16.9	17.5	18.2	18.8	20.1	20.1	21.4
50°	13.6	14.3	14.9	15.6	16.2	17.5	17.5	18.2
52.5°	11.7	12.3	13.0	13.6	14.3	14.9	15.6	16.2
55°	10.4	11.0	11.0	11.7	12.3	13.0	13.0	13.6
57.5°	9.1	9.7	9.7	9.7	10.4	11.0	11.0	11.7
60°	7.8	8.4	8.4	8.4	9.1	9.1	9.1	9.7
62.5°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
65°	5.8	5.8	5.8	5.8	5.8	5.8	5.2	5.8
67.5°	5.2	5.2	5.2	4.5	4.5	4.5	4.5	4.5
70°	4.5	4.5	4.5	3.9	3.9	3.9	3.2	3.2
72.5°	3.9	3.9	3.9	3.2	3.2	3.2	2.6	2.6
75°	3.2	3.2	3.2	3.2	2.6	2.6	2.6	2.6
77.5°	2.6	2.6	2.6	2.6	2.6	2.6	1.9	1.9
80°	2.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9
82.5°	1.9	1.9	1.9	1.9	1.3	1.3	1.3	1.3
85°	1.3	1.3	1.3	1.3	1.3	1.3	0.6	0.6
87.5°	1.3	0.6	0.6	0.6	0.6	0.6	0.6	0.6
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)