

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: P182754

Luminaire Tested: **LDSQA4A13927D010TE LAR35FL 4LSQA1H 30°**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P182754  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26801)  
Test Lab: INNOVATION CENTER-P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: io LED  
Catalog Number: LDSQA4A13927D010TE LAR35FL 4LSQA1H 30°  
Description: PORTFOLIO 4" SQUARE ADJUSTABLE REFLECTOR, ANGLE-CUT TRIM,  
SELF-FLANGED, 35° FLOOD, 30° Tilt  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1354.9 lumens  
Efficiency: N/A  
Efficacy: 60.8 lumens/watt  
Spacing Criteria (0/90/45): 2.46 / 0.59 / 1.2  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

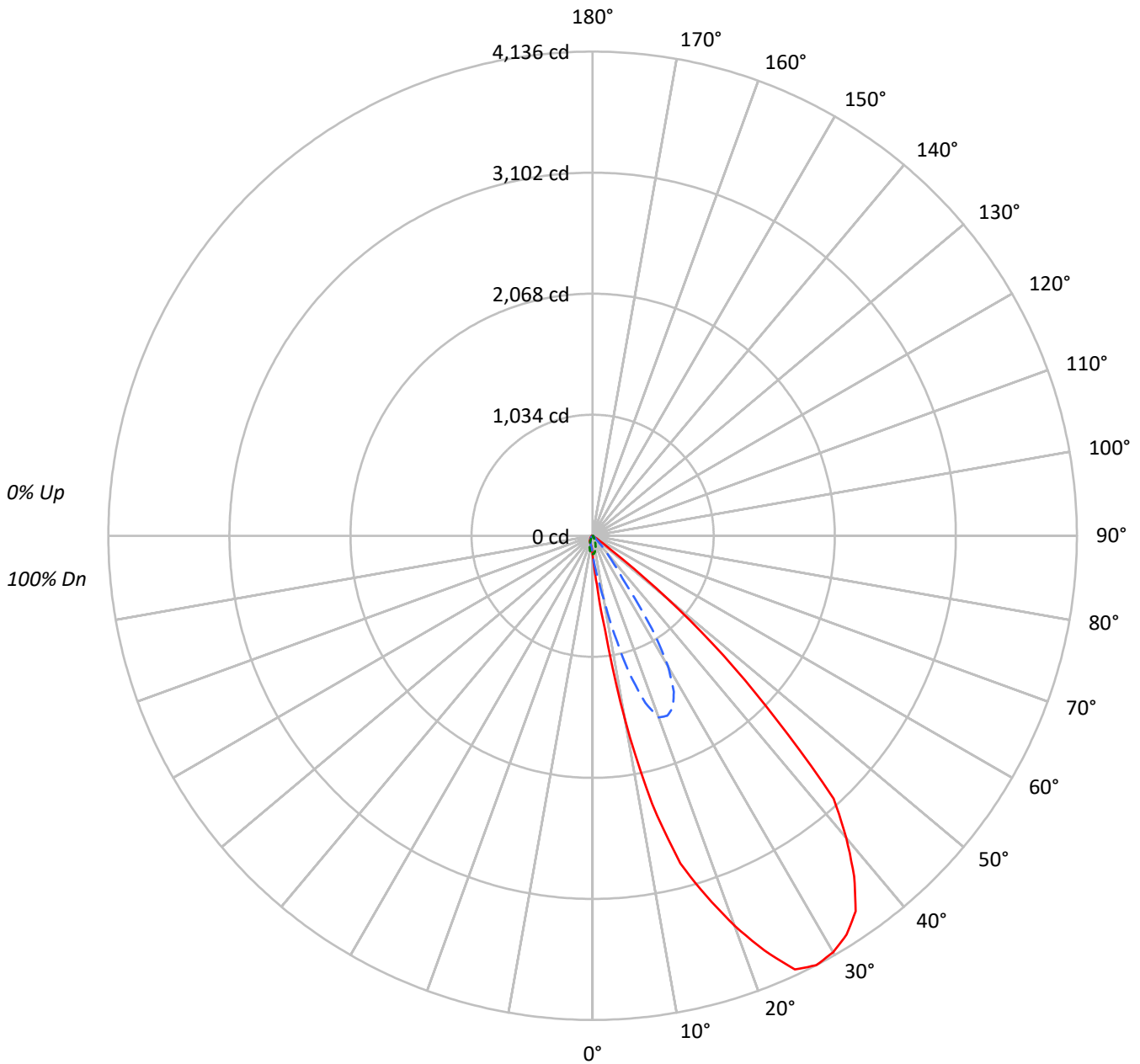
Input Watts (W): 22.27  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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	105	102	103	101	99	99	98	96	96	94	93	91								
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	87	84	83								
3	99	91	85	81	97	90	84	80	87	83	79	85	81	77	82	79	76	74								
4	92	83	77	72	91	82	76	71	80	75	71	78	73	70	76	72	69	67								
5	86	76	69	64	85	75	69	64	74	68	63	72	67	63	70	66	62	60								
6	81	70	63	58	79	69	62	58	68	62	57	66	61	57	65	60	56	55								
7	75	64	57	52	74	64	57	52	62	56	52	61	55	51	60	55	51	49								
8	71	59	52	47	69	59	52	47	57	51	47	56	51	47	55	50	46	45								
9	66	55	48	43	65	54	47	43	53	47	43	52	46	42	51	46	42	41								
10	62	50	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37								

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

	0°	90°	180°
0°	15316	15316	15316
5°	40269	14587	9530
10°	157894	12621	7929
15°	290689	9949	7031
20°	365278	7031	6392
25°	436914	4639	5697
30°	459462	2908	4989
35°	463165	1762	4328
40°	426202	1176	3680
45°	303228	849	3055
50°	125301	648	2517
55°	7229	625	2196
60°	833	601	1802
65°	275	711	1284
70°	340	708	878
75°	449	936	936
80°	0	1395	1060
85°	0	2779	1334



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	24.8	1.8
10°-20°	198.5	14.7
20°-30°	410.6	30.3
30°-40°	447.0	33.0
40°-50°	245.1	18.1
50°-60°	21.2	1.6
60°-70°	3.5	0.3
70°-80°	2.5	0.2
80°-90°	1.6	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°	634.0	46.8
0°-40°	1081.0	79.8
0°-60°	1347.4	99.4
0°-90°	1354.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1354.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	158	158	158	158	158	
5°	414	283	150	104	98	76
15°	2898	1218	99	67	70	809
25°	4088	1621	43	41	53	1846
35°	3916	443	15	24	37	2404
45°	2213	45	6	13	22	1689
55°	43	5	4	8	13	146
65°	1	2	3	5	6	2
75°	1	2	2	4	2	1
85°	0	1	2	2	1	0
90°	0	0	0	0	0	



TEST NUMBER: P182754

CATALOG NUMBER: LDSQA4A13927D010TE LAR35FL 4LSQA1H 30°

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1
2.5°	248.6	239.9	238.7	239.9	233.7	233.1	234.4	229.4	225.1	220.7	217.0
5°	414.1	396.2	390.6	383.1	364.5	358.3	357.1	337.3	318.0	300.1	283.3
7.5°	804.7	768.8	749.6	712.4	655.3	629.9	616.3	551.2	490.4	435.2	385.0
10°	1605.1	1510.9	1465.0	1395.0	1270.3	1209.0	1164.3	1000.6	839.5	684.5	548.1
12.5°	2342.3	2290.2	2222.6	2185.4	1983.3	1905.8	1832.0	1605.1	1359.6	1109.1	860.5
15°	2898.4	2822.1	2750.2	2732.9	2574.2	2483.6	2401.8	2166.8	1874.8	1556.1	1218.3
17.5°	3225.1	3170.6	3102.4	3069.5	2883.5	2810.4	2717.4	2489.8	2205.9	1888.5	1496.0
20°	3543.2	3462.6	3366.5	3316.9	3111.1	3026.7	2921.3	2682.0	2381.3	2044.1	1651.6
22.5°	3834.0	3729.8	3593.4	3516.5	3285.3	3192.3	3074.5	2815.3	2489.8	2104.2	1664.6
25°	4087.5	3993.3	3811.6	3677.1	3404.3	3294.6	3157.6	2886.6	2528.9	2099.3	1620.6
27.5°	4135.9	4072.6	3909.6	3754.0	3445.8	3323.7	3181.7	2901.5	2501.6	2030.4	1502.2
30°	4107.4	4039.2	3908.4	3749.6	3428.5	3305.1	3157.6	2838.3	2395.0	1869.9	1285.2
32.5°	4038.5	3979.6	3823.4	3656.0	3342.9	3214.6	3059.0	2690.1	2212.1	1614.4	945.5
35°	3916.4	3827.8	3639.3	3501.6	3207.2	3075.1	2884.8	2492.3	1938.7	1160.6	443.3
37.5°	3667.8	3581.6	3445.8	3318.8	3031.7	2876.1	2675.2	2217.0	1437.1	633.0	274.0
40°	3370.2	3295.8	3177.4	3054.0	2758.3	2579.1	2357.8	1732.8	845.7	356.5	168.6
42.5°	3046.6	2969.7	2835.8	2692.0	2369.6	2180.5	1941.2	1121.5	445.8	210.2	91.8
45°	2213.3	2144.5	2047.2	1943.6	1757.0	1620.6	1305.7	589.0	246.8	111.6	45.3
47.5°	1514.6	1432.8	1253.0	1035.4	839.5	717.9	540.0	255.4	126.5	55.8	26.7
50°	831.4	744.6	652.8	508.4	340.4	279.6	217.6	123.4	57.0	27.9	14.9
52.5°	204.0	180.4	164.9	151.9	120.3	108.5	91.8	51.5	26.0	15.5	10.5
55°	42.8	39.7	37.8	37.2	34.1	32.9	28.5	19.8	14.3	9.9	5.0
57.5°	12.4	11.8	12.4	12.4	12.4	11.8	11.8	8.7	8.1	5.0	3.1
60°	4.3	4.3	4.3	5.0	5.0	5.0	5.6	5.6	4.3	3.1	2.5
62.5°	1.9	1.9	1.9	2.5	2.5	3.1	3.1	3.1	2.5	2.5	1.9
65°	1.2	1.2	1.2	1.2	1.9	1.9	1.9	1.9	1.9	1.9	1.9
67.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.9
70°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.9
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.9
75°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.9
77.5°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.2	1.2	1.2	1.9
80°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	1.2	1.2	1.2	1.2
82.5°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	1.2	1.2	1.2
85°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	1.2	1.2	1.2
87.5°	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	1.2	1.2	1.2
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1
2.5°	206.5	200.3	192.8	184.8	183.5	179.2	173.0	164.3	161.2	155.0	149.4
5°	259.2	242.4	225.1	209.6	204.6	197.8	186.6	171.1	161.2	150.0	140.7
7.5°	329.8	291.4	256.1	228.2	219.5	208.3	191.0	171.1	156.2	140.7	128.3
10°	424.1	345.9	285.2	239.9	225.7	210.8	187.9	163.7	146.3	128.3	115.3
12.5°	605.7	425.9	312.5	246.1	226.3	207.1	177.9	151.9	132.1	114.1	101.1
15°	861.2	577.8	367.6	250.5	220.1	196.5	162.4	135.8	115.9	99.2	86.8
17.5°	1076.9	721.7	441.4	262.9	215.8	182.9	144.5	117.2	98.0	83.1	73.2
20°	1182.3	786.1	474.9	264.7	203.4	162.4	123.4	97.3	80.6	68.2	59.5
22.5°	1169.9	764.4	443.9	231.9	171.7	137.0	102.3	78.7	64.5	54.6	48.4
25°	1086.8	670.2	362.1	177.3	133.9	111.0	80.0	61.4	50.2	43.4	38.4
27.5°	947.3	538.1	264.1	125.2	101.7	84.3	59.5	47.1	38.4	33.5	30.4
30°	729.7	344.1	151.9	89.9	73.8	60.1	44.6	34.1	29.1	26.0	23.6
32.5°	376.3	167.4	101.1	64.5	52.1	43.4	31.0	24.8	21.7	19.8	18.6
35°	206.5	119.0	70.1	41.5	33.5	27.9	21.1	17.4	16.1	14.9	14.9
37.5°	142.0	73.8	39.1	24.8	20.5	17.4	14.3	12.4	11.8	11.8	11.8
40°	81.8	39.1	22.3	15.5	13.0	11.8	9.9	9.3	9.3	9.3	9.9
42.5°	42.2	22.9	14.9	10.5	9.3	8.1	6.8	6.8	6.8	7.4	8.1
45°	24.8	15.5	9.9	6.8	6.2	5.6	5.0	5.0	5.6	6.2	6.8
47.5°	15.5	10.5	6.2	4.3	3.7	3.7	3.7	3.7	4.3	5.0	5.6
50°	10.5	5.6	3.7	2.5	2.5	2.5	2.5	3.1	3.7	4.3	5.0
52.5°	5.6	3.1	2.5	1.9	1.9	1.9	2.5	2.5	3.1	3.7	4.3
55°	3.1	2.5	1.9	1.9	1.9	1.9	1.9	2.5	3.1	3.7	4.3
57.5°	2.5	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	3.1	3.7
60°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	3.1	3.7
62.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	3.1	3.1
65°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	3.1	3.1
67.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	3.1
70°	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5	3.1
72.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5
75°	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5	2.5	3.1
77.5°	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5	2.5
80°	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5	2.5
82.5°	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5	2.5
85°	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5	2.5	2.5
87.5°	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.5	2.5	2.5	2.5
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°	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1
2.5°	146.3	141.4	136.4	136.4	133.9	130.2	129.0	125.2	122.8	121.5	120.3
5°	133.9	126.5	119.7	119.0	115.9	111.6	109.7	106.0	103.5	102.3	101.7
7.5°	119.7	112.2	105.4	104.2	101.7	98.6	96.7	93.6	92.4	91.1	90.5
10°	106.0	98.6	93.6	92.4	90.5	88.0	86.2	84.3	83.1	82.5	82.5
12.5°	92.4	86.8	82.5	81.2	80.0	78.1	76.9	75.6	75.0	75.0	75.0
15°	80.0	75.0	71.3	71.3	70.1	68.8	68.8	67.6	67.0	67.6	68.2
17.5°	67.6	63.9	60.8	60.8	60.1	59.5	59.5	59.5	60.1	60.8	62.0
20°	55.8	52.7	51.5	51.5	50.8	51.5	51.5	52.1	52.7	54.6	56.4
22.5°	45.3	43.4	42.2	42.8	42.8	43.4	44.0	45.3	46.5	48.4	50.2
25°	36.6	35.3	34.7	35.3	36.0	36.6	37.8	39.1	40.9	42.8	45.3
27.5°	29.1	28.5	28.5	29.1	29.8	31.0	32.9	34.1	36.0	37.8	40.3
30°	23.6	22.9	23.6	24.8	25.4	26.7	27.9	29.8	31.6	33.5	36.0
32.5°	18.6	19.2	19.8	20.5	21.1	22.9	24.2	25.4	27.3	29.1	31.6
35°	15.5	16.1	16.7	17.4	18.0	19.2	20.5	21.7	23.6	25.4	27.9
37.5°	12.4	13.0	13.6	14.9	15.5	16.1	18.0	18.6	20.5	21.7	24.2
40°	10.5	11.2	11.8	12.4	13.0	14.3	15.5	16.1	17.4	19.2	21.1
42.5°	8.7	9.3	9.9	10.5	11.2	12.4	13.0	14.3	15.5	16.7	18.0
45°	7.4	8.1	8.7	9.3	9.9	10.5	11.2	12.4	13.0	14.3	15.5
47.5°	6.2	6.8	8.1	8.1	8.7	9.3	9.9	10.5	11.8	12.4	13.6
50°	5.6	6.2	6.8	7.4	7.4	8.1	8.7	9.3	9.9	10.5	11.8
52.5°	5.0	5.6	6.2	6.2	6.8	7.4	8.1	8.1	8.7	9.3	9.9
55°	4.3	5.0	5.6	5.6	6.2	6.8	6.8	7.4	8.1	8.1	8.7
57.5°	4.3	4.3	5.0	5.0	5.6	5.6	6.2	6.8	6.8	7.4	8.1
60°	3.7	4.3	4.3	5.0	5.0	5.6	5.6	6.2	6.2	6.8	6.8
62.5°	3.7	3.7	4.3	4.3	5.0	5.0	5.6	5.6	5.6	6.2	6.2
65°	3.7	3.7	4.3	4.3	4.3	5.0	5.0	5.0	5.0	5.6	5.6
67.5°	3.1	3.7	3.7	4.3	4.3	4.3	4.3	4.3	5.0	5.0	5.0
70°	3.1	3.7	3.7	3.7	3.7	4.3	4.3	4.3	4.3	4.3	4.3
72.5°	3.1	3.1	3.1	3.1	3.7	3.7	3.7	3.7	3.7	3.7	3.7
75°	3.1	3.1	3.1	3.1	3.1	3.7	3.7	3.7	3.7	3.7	3.7
77.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
80°	2.5	2.5	2.5	2.5	2.5	3.1	2.5	2.5	2.5	2.5	2.5
82.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.9	1.9
85°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.9	1.9	1.9	1.9
87.5°	2.5	2.5	2.5	1.9	1.9	1.9	1.9	1.9	1.9	1.2	1.2
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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CATALOG NUMBER: LDSQA4A13927D010TE LAR35FL 4LSQA1H 30°

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	158.1	158.1	158.1	158.1	158.1	158.1	158.1	158.1
2.5°	118.4	117.2	118.4	117.2	117.2	114.7	116.6	115.3
5°	99.8	98.6	99.8	99.2	98.0	97.3	98.6	98.0
7.5°	89.3	88.0	89.3	89.3	88.0	87.4	88.7	88.0
10°	81.2	80.6	81.2	81.2	80.6	80.0	81.2	80.6
12.5°	74.4	73.8	75.0	75.0	74.4	74.4	75.6	74.4
15°	68.2	68.2	69.4	69.4	69.4	69.4	70.7	70.1
17.5°	62.0	63.2	64.5	65.1	65.1	65.1	66.3	66.3
20°	57.0	58.3	59.5	60.1	60.8	60.8	62.0	62.0
22.5°	51.5	52.7	54.6	55.2	55.8	56.4	57.7	57.7
25°	46.5	47.7	49.6	50.2	51.5	52.1	53.3	53.3
27.5°	41.5	43.4	44.6	45.9	46.5	47.7	49.0	49.0
30°	37.2	39.1	40.3	41.5	42.2	43.4	44.6	44.6
32.5°	32.9	34.7	36.0	37.2	38.4	39.1	40.9	40.9
35°	29.1	30.4	32.2	32.9	34.1	35.3	36.6	36.6
37.5°	25.4	26.7	27.9	29.1	30.4	31.0	32.2	32.9
40°	22.3	23.6	24.8	25.4	26.7	27.9	28.5	29.1
42.5°	19.2	20.5	21.7	22.3	23.6	24.2	25.4	25.4
45°	16.7	18.0	18.6	19.2	20.5	21.1	22.3	22.3
47.5°	14.3	15.5	16.1	16.7	17.4	18.0	19.2	19.2
50°	12.4	13.0	13.6	14.3	14.9	16.1	16.7	16.7
52.5°	10.5	11.8	11.8	12.4	13.0	13.6	14.3	14.9
55°	9.3	9.9	10.5	10.5	11.2	11.8	12.4	13.0
57.5°	8.1	8.7	9.3	9.3	9.9	9.9	10.5	11.2
60°	7.4	7.4	8.1	8.1	8.1	8.7	8.7	9.3
62.5°	6.2	6.2	6.8	6.8	6.8	6.8	6.8	6.8
65°	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
67.5°	5.0	5.0	5.0	5.0	4.3	4.3	4.3	4.3
70°	4.3	4.3	4.3	4.3	3.7	3.7	3.7	3.1
72.5°	3.7	3.7	3.7	3.7	3.1	3.1	2.5	2.5
75°	3.1	3.1	3.1	3.1	3.1	2.5	2.5	2.5
77.5°	3.1	2.5	2.5	2.5	2.5	2.5	2.5	1.9
80°	2.5	2.5	1.9	1.9	1.9	1.9	1.9	1.9
82.5°	1.9	1.9	1.9	1.9	1.2	1.2	1.2	1.2
85°	1.9	1.2	1.2	1.2	1.2	1.2	1.2	1.2
87.5°	1.2	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)