

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: P182837

Luminaire Tested: **LDSQA4A18940D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182837
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: LDSQA4A18940D010TE LAR35FL 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 35° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1788.6 lumens
Efficiency: N/A
Efficacy: 61.4 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

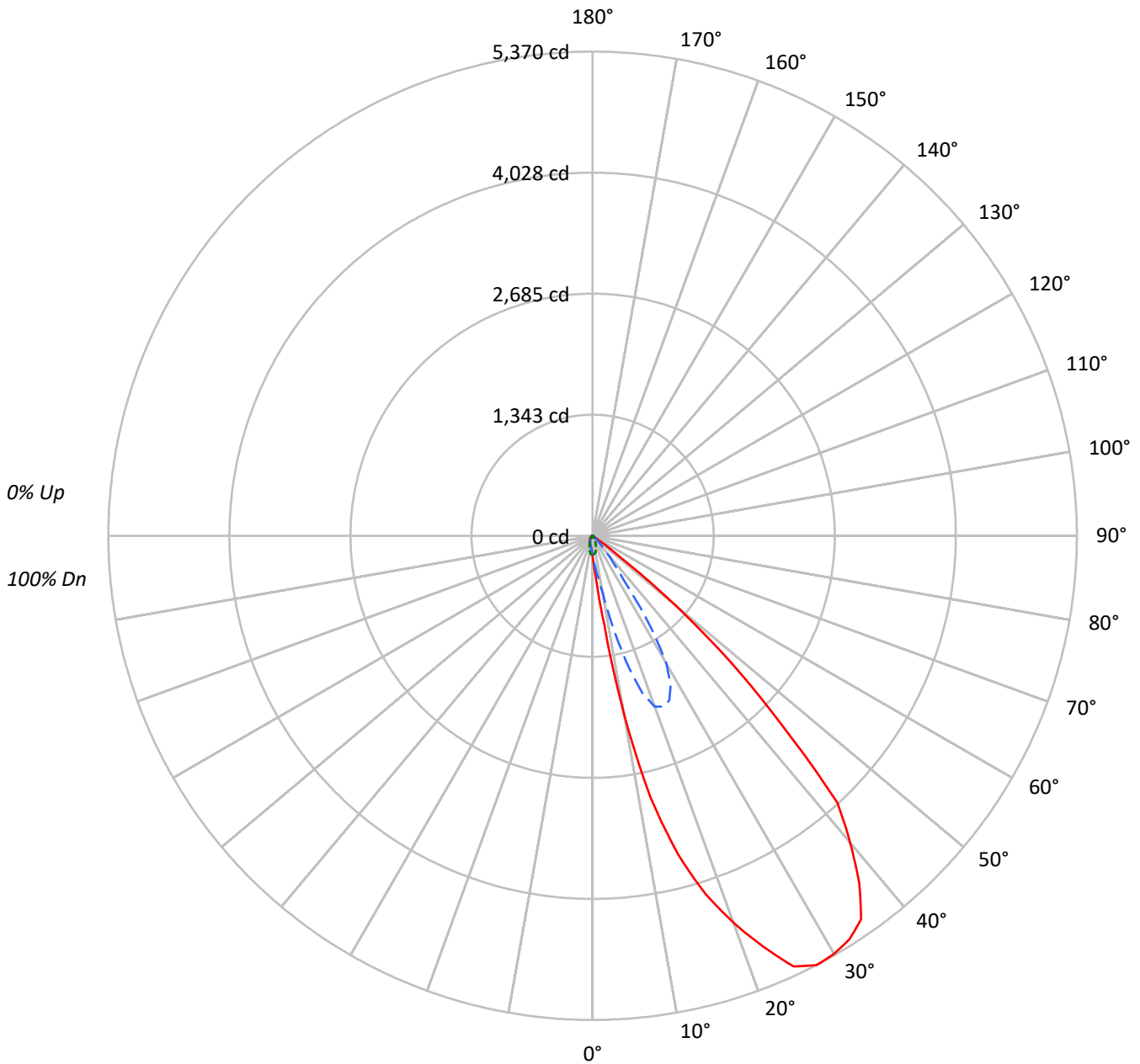
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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°	21429	21429	21429
5°	50208	20217	14139
10°	198402	17766	11785
15°	367172	14232	10340
20°	470804	10351	9361
25°	563301	7343	8284
30°	598966	4832	7293
35°	613856	2921	6351
40°	561921	1897	5463
45°	405473	1329	4466
50°	177011	1055	3723
55°	12211	895	3125
60°	2228	853	2558
65°	802	802	1811
70°	736	991	1246
75°	674	1310	1310
80°	0	1953	1450
85°	0	3890	1000



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.2	1.8
10°-20°	253.2	14.2
20°-30°	530.0	29.6
30°-40°	590.0	33.0
40°-50°	338.7	18.9
50°-60°	33.8	1.9
60°-70°	5.3	0.3
70°-80°	3.4	0.2
80°-90°	2.1	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°	815.4	45.6
0°-40°	1405.4	78.6
0°-60°	1777.9	99.4
0°-90°	1788.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1788.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	221	221	221	221	221	
5°	516	356	208	152	145	95
15°	3661	1462	142	100	103	1035
25°	5270	2012	69	61	78	2386
35°	5191	614	25	35	54	3169
45°	2960	74	10	19	33	2260
55°	72	11	5	12	18	216
65°	4	3	4	7	8	5
75°	2	2	4	4	4	1
85°	0	2	4	3	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°	221.2	221.2	221.2	221.2	221.2	221.2	221.2	221.2	221.2	221.2	221.2
2.5°	330.4	323.4	316.3	311.9	307.5	313.7	309.3	307.5	295.2	289.0	283.7
5°	516.3	503.1	483.7	467.9	452.0	455.5	443.2	428.2	397.4	375.4	356.0
7.5°	996.5	963.9	904.0	845.9	787.7	777.1	738.4	671.4	585.1	519.9	463.5
10°	2016.9	1918.2	1808.0	1689.1	1549.9	1511.1	1415.1	1233.6	1035.3	808.9	645.0
12.5°	2977.3	2932.3	2802.8	2648.6	2497.9	2405.4	2305.9	2006.3	1691.7	1327.0	1022.1
15°	3661.0	3633.7	3520.0	3379.9	3217.8	3157.9	3036.3	2737.6	2340.2	1904.1	1461.8
17.5°	4167.7	4121.0	4002.0	3849.6	3657.5	3606.4	3461.0	3164.1	2751.7	2313.8	1823.0
20°	4566.8	4537.7	4383.5	4200.3	3970.3	3908.6	3738.6	3429.3	2980.8	2515.6	2016.0
22.5°	4925.4	4876.1	4686.6	4468.1	4205.5	4139.5	3950.0	3610.8	3128.8	2610.7	2050.3
25°	5269.9	5195.0	4965.1	4678.7	4370.3	4280.4	4072.5	3713.0	3183.5	2618.7	2011.6
27.5°	5370.4	5332.5	5120.1	4787.1	4430.2	4328.9	4112.1	3735.9	3163.2	2546.4	1872.4
30°	5354.5	5322.8	5145.7	4797.6	4419.6	4313.0	4092.8	3665.4	3045.1	2357.9	1626.5
32.5°	5304.3	5291.9	5077.8	4706.0	4321.0	4204.7	3966.8	3490.1	2824.0	2070.6	1188.6
35°	5190.6	5142.2	4875.2	4525.4	4155.3	4027.6	3758.8	3239.0	2532.3	1507.6	614.1
37.5°	4857.6	4819.7	4609.1	4302.5	3942.1	3778.2	3494.5	2914.7	1960.5	857.3	367.4
40°	4443.4	4424.9	4259.3	3985.3	3600.2	3415.2	3106.8	2385.2	1196.5	487.3	242.3
42.5°	4018.7	4013.5	3836.4	3550.0	3132.3	2920.0	2600.2	1608.9	636.2	294.3	140.1
45°	2959.6	2991.4	2868.0	2696.2	2377.2	2223.0	1808.0	829.1	366.5	163.0	74.0
47.5°	2075.9	2040.7	1822.1	1521.7	1230.0	1041.5	787.7	392.1	195.6	85.5	42.3
50°	1174.5	1180.7	983.3	795.6	521.6	413.2	313.7	197.4	94.3	44.9	25.6
52.5°	306.6	320.7	276.7	237.9	202.7	164.8	133.0	85.5	44.9	26.4	16.7
55°	72.3	74.9	69.6	65.2	61.7	54.6	48.5	37.0	24.7	16.7	10.6
57.5°	25.6	26.4	25.6	25.6	24.7	23.8	22.0	19.4	15.0	10.6	7.0
60°	11.5	12.3	11.5	12.3	12.3	12.3	12.3	12.3	8.8	6.2	4.4
62.5°	5.3	5.3	5.3	5.3	6.2	6.2	7.0	7.0	5.3	4.4	3.5
65°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.6
67.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
70°	2.6	2.6	2.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.6
72.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
75°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
77.5°	0.0	0.0	0.0	0.9	0.9	0.9	0.9	1.8	1.8	1.8	1.8
80°	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9	1.8	1.8	1.8
82.5°	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9	1.8	1.8	1.8
85°	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	1.8	1.8	1.8
87.5°	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	1.8	1.8	1.8
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°	221.2	221.2	221.2	221.2	221.2	221.2	221.2	221.2	221.2	221.2	221.2
2.5°	274.0	273.1	263.5	256.4	252.9	247.6	241.4	232.6	222.9	214.1	210.6
5°	333.1	321.6	301.3	284.6	276.7	268.7	254.6	238.8	223.8	207.9	200.0
7.5°	409.7	376.2	336.6	305.7	292.5	279.3	259.0	237.0	216.8	195.6	184.2
10°	514.6	437.0	368.3	319.0	299.6	282.0	252.9	225.6	203.5	180.6	165.6
12.5°	735.7	543.6	401.8	325.1	299.6	276.7	241.4	209.7	185.0	161.2	147.1
15°	1060.0	734.0	474.9	331.3	293.4	264.3	223.8	189.4	163.0	141.9	128.6
17.5°	1321.7	909.3	565.7	347.2	285.5	247.6	200.9	164.8	140.1	120.7	110.1
20°	1453.8	983.3	607.1	349.8	266.1	221.2	173.6	139.2	117.2	100.4	91.6
22.5°	1451.2	959.5	570.1	306.6	233.5	191.2	146.3	114.5	96.9	83.7	76.7
25°	1359.6	849.4	475.8	244.9	188.6	158.6	118.9	92.5	78.4	68.7	62.6
27.5°	1187.7	689.9	355.1	181.5	147.1	125.1	92.5	74.0	62.6	55.5	51.1
30°	932.2	461.7	223.8	134.8	111.9	94.3	71.4	57.3	49.3	43.2	40.5
32.5°	513.7	240.5	150.7	98.7	81.9	68.7	52.9	41.4	36.1	31.7	30.8
35°	283.7	170.1	107.5	66.1	54.6	46.7	36.1	30.0	26.4	24.7	24.7
37.5°	200.9	109.3	64.3	41.4	35.2	30.8	24.7	21.1	20.3	19.4	19.4
40°	120.7	64.3	38.8	27.3	23.8	21.1	18.5	15.9	15.9	15.0	15.9
42.5°	66.1	38.8	26.4	19.4	16.7	15.9	13.2	12.3	12.3	12.3	13.2
45°	39.6	25.6	18.5	14.1	12.3	10.6	9.7	8.8	9.7	9.7	10.6
47.5°	25.6	18.5	12.3	8.8	7.9	7.0	6.2	7.0	7.0	7.9	8.8
50°	17.6	11.5	7.9	5.3	5.3	4.4	5.3	5.3	6.2	7.0	7.9
52.5°	11.5	7.9	5.3	4.4	3.5	3.5	3.5	4.4	5.3	6.2	7.0
55°	7.0	5.3	4.4	3.5	3.5	3.5	3.5	3.5	4.4	5.3	6.2
57.5°	5.3	4.4	3.5	2.6	2.6	2.6	3.5	3.5	4.4	4.4	5.3
60°	3.5	3.5	2.6	2.6	2.6	2.6	2.6	3.5	3.5	4.4	5.3
62.5°	3.5	3.5	2.6	2.6	2.6	2.6	3.5	3.5	3.5	4.4	4.4
65°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.5	3.5	3.5	4.4
67.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.5	3.5	4.4
70°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.5	3.5	4.4
72.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.5	3.5	3.5
75°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.5	3.5	3.5	3.5
77.5°	1.8	2.6	2.6	2.6	2.6	2.6	2.6	3.5	3.5	3.5	3.5
80°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.5	3.5	3.5	3.5
82.5°	1.8	2.6	2.6	2.6	2.6	2.6	2.6	3.5	3.5	3.5	3.5
85°	1.8	2.6	2.6	2.6	2.6	2.6	2.6	3.5	3.5	3.5	3.5
87.5°	1.8	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.5	3.5	3.5
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°	221.2	221.2	221.2	221.2	221.2	221.2	221.2	221.2	221.2	221.2	221.2
2.5°	206.2	200.0	194.7	196.5	193.0	186.8	185.0	180.6	175.3	174.5	174.5
5°	191.2	181.5	173.6	172.7	169.2	162.1	160.4	156.0	151.6	150.7	149.8
7.5°	172.7	162.1	155.1	153.3	150.7	144.5	143.6	139.2	136.6	134.8	134.8
10°	154.2	144.5	138.3	137.5	135.7	130.4	129.5	126.0	123.4	122.5	121.6
12.5°	136.6	128.6	123.4	122.5	120.7	116.3	115.4	112.8	111.0	110.1	110.1
15°	119.8	112.8	108.4	107.5	106.6	102.2	102.2	100.4	99.6	99.6	100.4
17.5°	103.1	96.9	93.4	92.5	92.5	89.0	89.9	89.0	89.0	89.0	90.8
20°	86.3	81.1	78.4	79.3	77.5	76.7	77.5	77.5	77.5	79.3	81.9
22.5°	72.3	67.8	65.2	66.1	66.1	65.2	66.1	67.0	68.7	71.4	74.0
25°	59.0	55.5	54.6	55.5	55.5	55.5	57.3	59.0	60.8	63.4	66.1
27.5°	47.6	44.9	44.9	45.8	46.7	46.7	49.3	51.1	53.7	56.4	59.0
30°	37.9	37.0	37.0	38.8	38.8	39.6	43.2	44.9	46.7	49.3	52.0
32.5°	30.0	30.0	30.8	32.6	32.6	34.4	37.0	38.8	40.5	43.2	45.8
35°	24.7	25.6	26.4	27.3	28.2	29.1	31.7	33.5	35.2	37.9	39.6
37.5°	20.3	21.1	22.0	23.8	23.8	24.7	27.3	29.1	30.0	32.6	35.2
40°	16.7	17.6	18.5	20.3	20.3	21.1	23.8	24.7	25.6	28.2	30.8
42.5°	14.1	15.0	15.9	16.7	17.6	18.5	20.3	21.1	22.9	24.7	26.4
45°	11.5	12.3	13.2	14.1	15.0	15.9	16.7	18.5	19.4	21.1	22.9
47.5°	9.7	10.6	11.5	12.3	13.2	13.2	15.0	15.9	16.7	18.5	20.3
50°	8.8	9.7	10.6	10.6	11.5	12.3	13.2	14.1	15.0	15.9	17.6
52.5°	7.0	7.9	8.8	9.7	9.7	10.6	11.5	12.3	13.2	14.1	15.0
55°	7.0	7.0	7.9	8.8	8.8	9.7	10.6	11.5	11.5	12.3	13.2
57.5°	6.2	7.0	7.0	7.9	7.9	8.8	9.7	9.7	10.6	10.6	11.5
60°	5.3	6.2	7.0	7.0	7.0	7.9	7.9	8.8	8.8	9.7	9.7
62.5°	5.3	6.2	6.2	7.0	7.0	7.0	7.9	7.9	7.9	8.8	8.8
65°	5.3	5.3	6.2	6.2	6.2	6.2	7.0	7.0	7.0	7.9	7.9
67.5°	4.4	5.3	5.3	5.3	6.2	6.2	6.2	6.2	6.2	7.0	7.0
70°	4.4	4.4	5.3	5.3	5.3	5.3	5.3	6.2	6.2	6.2	6.2
72.5°	4.4	4.4	4.4	4.4	5.3	5.3	5.3	5.3	5.3	5.3	5.3
75°	3.5	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
77.5°	3.5	3.5	3.5	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
80°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
82.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2.6	2.6
85°	3.5	3.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
87.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	1.8	1.8	1.8
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: LDSQA4A18940D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	221.2	221.2	221.2	221.2	221.2	221.2	221.2	221.2
2.5°	170.9	169.2	168.3	170.9	167.4	169.2	168.3	169.2
5°	147.1	145.4	144.5	147.1	143.6	145.4	143.6	145.4
7.5°	132.2	131.3	130.4	132.2	129.5	131.3	130.4	131.3
10°	119.8	118.9	118.1	120.7	118.1	119.8	118.9	119.8
12.5°	109.3	109.3	108.4	110.1	108.4	110.1	109.3	110.1
15°	99.6	100.4	99.6	101.3	100.4	102.2	101.3	103.1
17.5°	91.6	92.5	92.5	95.2	94.3	96.9	96.0	96.9
20°	83.7	84.6	85.5	87.2	87.2	89.9	89.0	90.8
22.5°	75.8	77.5	77.5	80.2	80.2	82.8	82.8	83.7
25°	67.8	70.5	71.4	73.1	74.0	76.7	76.7	77.5
27.5°	61.7	63.4	64.3	67.0	67.8	70.5	70.5	72.3
30°	54.6	57.3	58.2	59.9	60.8	63.4	63.4	65.2
32.5°	48.5	50.2	52.0	53.7	54.6	57.3	57.3	59.0
35°	42.3	44.9	45.8	47.6	49.3	52.0	52.0	53.7
37.5°	37.0	39.6	40.5	42.3	44.1	46.7	46.7	48.5
40°	32.6	35.2	36.1	37.9	38.8	42.3	42.3	43.2
42.5°	29.1	30.8	31.7	33.5	34.4	36.1	36.1	37.9
45°	24.7	26.4	27.3	28.2	30.0	31.7	31.7	32.6
47.5°	21.1	22.9	23.8	24.7	25.6	27.3	27.3	29.1
50°	18.5	19.4	20.3	21.1	22.0	23.8	23.8	24.7
52.5°	15.9	16.7	17.6	18.5	19.4	20.3	21.1	22.0
55°	14.1	15.0	15.0	15.9	16.7	17.6	17.6	18.5
57.5°	12.3	13.2	13.2	13.2	14.1	15.0	15.0	15.9
60°	10.6	11.5	11.5	11.5	12.3	12.3	12.3	13.2
62.5°	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7
65°	7.9	7.9	7.9	7.9	7.9	7.9	7.0	7.9
67.5°	7.0	7.0	7.0	6.2	6.2	6.2	6.2	6.2
70°	6.2	6.2	6.2	5.3	5.3	5.3	4.4	4.4
72.5°	5.3	5.3	5.3	4.4	4.4	4.4	3.5	3.5
75°	4.4	4.4	4.4	4.4	3.5	3.5	3.5	3.5
77.5°	3.5	3.5	3.5	3.5	3.5	3.5	2.6	2.6
80°	3.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6
82.5°	2.6	2.6	2.6	2.6	1.8	1.8	1.8	1.8
85°	1.8	1.8	1.8	1.8	1.8	1.8	0.9	0.9
87.5°	1.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9
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)