

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: P182834

Luminaire Tested: **LDSQA4A18927D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182834
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: LDSQA4A18927D010TE LAR35FL 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, 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: 1568.2 lumens
Efficiency: N/A
Efficacy: 53.9 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

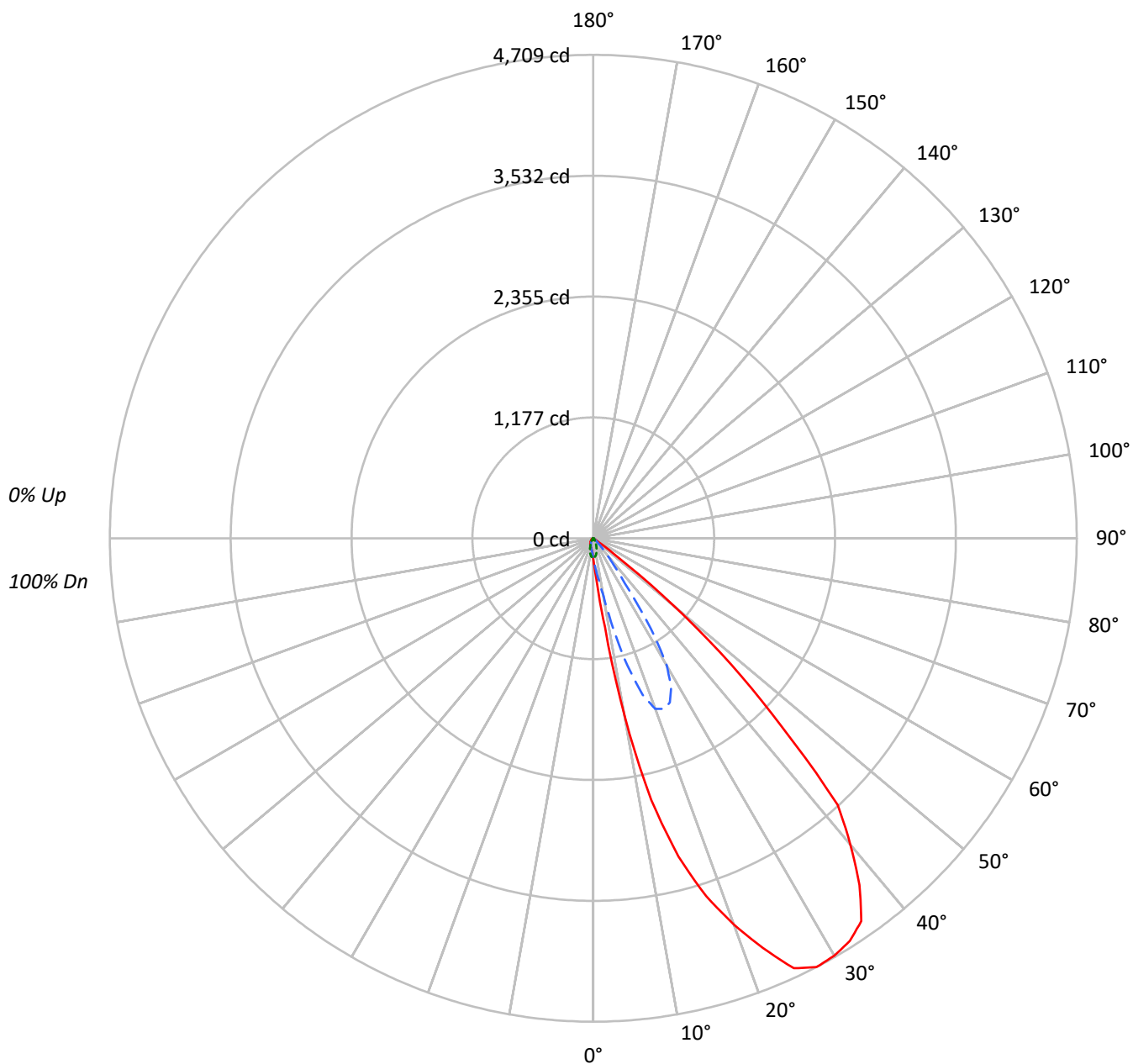
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10
RCR																					
0	119	119	119	119		116	116	116	116		111	111	111		106	106	106		102	102	102
1	112	109	106	104		110	107	104	102		103	101	99		99	97	96		96	94	93
2	106	100	95	91		103	98	94	90		95	91	88		92	89	86		89	86	84
3	99	91	85	80		97	90	84	80		87	82	78		84	80	77		82	79	76
4	92	83	77	71		90	82	76	71		80	74	70		78	73	69		76	72	68
5	86	76	69	64		84	75	68	64		73	67	63		71	66	62		70	65	62
6	80	70	62	57		79	69	62	57		67	61	57		66	60	56		64	59	56
7	75	64	57	52		74	63	56	51		62	56	51		60	55	51		59	54	50
8	70	59	52	47		69	58	51	46		57	51	46		56	50	46		55	50	46
9	66	54	47	42		64	54	47	42		53	46	42		52	46	42		51	45	42
10	62	50	43	38		60	50	43	38		49	42	38		48	42	38		47	42	38

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	18784	18784	18784
5°	44023	17728	12399
10°	173947	15582	10339
15°	321930	12476	9066
20°	412783	9082	8206
25°	493886	6445	7269
30°	525159	4240	6399
35°	538215	2554	5570
40°	492683	1657	4793
45°	355508	1165	3918
50°	155203	934	3255
55°	10691	777	2736
60°	1938	756	2248
65°	711	711	1605
70°	651	878	1105
75°	561	1160	1160
80°	0	1729	1283
85°	0	3446	889



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	28.2	1.8
10°-20°	222.0	14.2
20°-30°	464.7	29.6
30°-40°	517.3	33.0
40°-50°	296.9	18.9
50°-60°	29.7	1.9
60°-70°	4.7	0.3
70°-80°	2.9	0.2
80°-90°	1.8	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°	714.9	45.6
0°-40°	1232.2	78.6
0°-60°	1558.8	99.4
0°-90°	1568.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1568.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	194	194	194	194	194	
5°	453	312	182	133	128	83
15°	3210	1282	124	87	90	907
25°	4620	1764	60	53	68	2092
35°	4551	538	22	31	47	2779
45°	2595	65	8	17	29	1981
55°	63	9	5	10	16	189
65°	3	2	3	6	7	4
75°	2	2	3	4	3	1
85°	0	2	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°	193.9	193.9	193.9	193.9	193.9	193.9	193.9	193.9	193.9	193.9	193.9
2.5°	289.7	283.5	277.3	273.5	269.6	275.0	271.2	269.6	258.8	253.4	248.8
5°	452.7	441.1	424.1	410.2	396.3	399.4	388.6	375.5	348.4	329.1	312.1
7.5°	873.7	845.2	792.6	741.6	690.6	681.4	647.4	588.7	513.0	455.8	406.4
10°	1768.3	1681.8	1585.2	1480.9	1358.9	1324.9	1240.7	1081.5	907.7	709.2	565.5
12.5°	2610.4	2571.0	2457.4	2322.2	2190.1	2109.0	2021.7	1759.1	1483.3	1163.4	896.1
15°	3209.9	3185.9	3086.3	2963.4	2821.3	2768.8	2662.2	2400.3	2051.8	1669.4	1281.6
17.5°	3654.1	3613.1	3508.8	3375.2	3206.8	3162.0	3034.5	2774.2	2412.6	2028.7	1598.4
20°	4004.0	3978.5	3843.4	3682.7	3481.0	3427.0	3277.9	3006.7	2613.5	2205.6	1767.6
22.5°	4318.5	4275.2	4109.1	3917.5	3687.3	3629.4	3463.3	3165.8	2743.3	2289.0	1797.7
25°	4620.5	4554.9	4353.2	4102.2	3831.8	3753.0	3570.6	3255.5	2791.2	2296.0	1763.7
27.5°	4708.6	4675.4	4489.2	4197.2	3884.3	3795.5	3605.4	3275.5	2773.4	2232.6	1641.6
30°	4694.7	4666.9	4511.6	4206.4	3875.0	3781.6	3588.4	3213.7	2669.9	2067.3	1426.1
32.5°	4650.7	4639.8	4452.1	4126.1	3788.5	3686.5	3477.9	3060.0	2476.0	1815.5	1042.1
35°	4551.0	4508.5	4274.4	3967.7	3643.3	3531.3	3295.6	2839.8	2220.3	1321.8	538.5
37.5°	4259.0	4225.8	4041.1	3772.3	3456.3	3312.6	3063.9	2555.5	1718.9	751.7	322.1
40°	3895.9	3879.7	3734.4	3494.2	3156.6	2994.3	2724.0	2091.2	1049.1	427.2	212.4
42.5°	3523.5	3518.9	3363.6	3112.5	2746.4	2560.2	2279.7	1410.6	557.8	258.0	122.8
45°	2594.9	2622.8	2514.6	2364.0	2084.3	1949.1	1585.2	727.0	321.4	142.9	64.9
47.5°	1820.1	1789.2	1597.6	1334.2	1078.5	913.1	690.6	343.8	171.5	74.9	37.1
50°	1029.8	1035.2	862.1	697.6	457.3	362.3	275.0	173.0	82.7	39.4	22.4
52.5°	268.8	281.2	242.6	208.6	177.7	144.5	116.7	74.9	39.4	23.2	14.7
55°	63.3	65.7	61.0	57.2	54.1	47.9	42.5	32.4	21.6	14.7	9.3
57.5°	22.4	23.2	22.4	22.4	21.6	20.9	19.3	17.0	13.1	9.3	6.2
60°	10.0	10.8	10.0	10.8	10.8	10.8	10.8	10.8	7.7	5.4	3.9
62.5°	4.6	4.6	4.6	4.6	5.4	5.4	6.2	6.2	4.6	3.9	3.1
65°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.3
67.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
70°	2.3	2.3	2.3	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.3
72.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
75°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
77.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.5	1.5	1.5	1.5
80°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.5	1.5	1.5
82.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.5	1.5	1.5
85°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.5	1.5	1.5
87.5°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.5	1.5	1.5
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	193.9	193.9	193.9	193.9	193.9	193.9	193.9	193.9	193.9	193.9	193.9
2.5°	240.3	239.5	231.0	224.8	221.7	217.1	211.7	203.9	195.5	187.7	184.6
5°	292.0	282.0	264.2	249.5	242.6	235.6	223.3	209.4	196.2	182.3	175.4
7.5°	359.2	329.9	295.1	268.1	256.5	244.9	227.1	207.8	190.0	171.5	161.5
10°	451.2	383.2	322.9	279.7	262.7	247.2	221.7	197.8	178.5	158.4	145.2
12.5°	645.1	476.7	352.3	285.1	262.7	242.6	211.7	183.9	162.2	141.4	129.0
15°	929.4	643.5	416.4	290.5	257.3	231.8	196.2	166.1	142.9	124.4	112.8
17.5°	1158.8	797.3	496.0	304.4	250.3	217.1	176.1	144.5	122.8	105.8	96.6
20°	1274.7	862.1	532.3	306.7	233.3	193.9	152.2	122.1	102.7	88.1	80.3
22.5°	1272.4	841.3	499.8	268.8	204.7	167.6	128.2	100.4	85.0	73.4	67.2
25°	1192.0	744.7	417.2	214.8	165.3	139.1	104.3	81.1	68.8	60.3	54.8
27.5°	1041.4	604.9	311.3	159.1	129.0	109.7	81.1	64.9	54.8	48.7	44.8
30°	817.3	404.8	196.2	118.2	98.1	82.7	62.6	50.2	43.3	37.9	35.5
32.5°	450.4	210.9	132.1	86.5	71.8	60.3	46.4	36.3	31.7	27.8	27.0
35°	248.8	149.1	94.2	57.9	47.9	40.9	31.7	26.3	23.2	21.6	21.6
37.5°	176.1	95.8	56.4	36.3	30.9	27.0	21.6	18.5	17.8	17.0	17.0
40°	105.8	56.4	34.0	23.9	20.9	18.5	16.2	13.9	13.9	13.1	13.9
42.5°	57.9	34.0	23.2	17.0	14.7	13.9	11.6	10.8	10.8	10.8	11.6
45°	34.8	22.4	16.2	12.4	10.8	9.3	8.5	7.7	8.5	8.5	9.3
47.5°	22.4	16.2	10.8	7.7	7.0	6.2	5.4	6.2	6.2	7.0	7.7
50°	15.5	10.0	7.0	4.6	4.6	3.9	4.6	4.6	5.4	6.2	7.0
52.5°	10.0	7.0	4.6	3.9	3.1	3.1	3.1	3.9	4.6	5.4	6.2
55°	6.2	4.6	3.9	3.1	3.1	3.1	3.1	3.1	3.9	4.6	5.4
57.5°	4.6	3.9	3.1	2.3	2.3	2.3	3.1	3.1	3.9	3.9	4.6
60°	3.1	3.1	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.9	4.6
62.5°	3.1	3.1	2.3	2.3	2.3	2.3	3.1	3.1	3.1	3.9	3.9
65°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.1	3.9
67.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.9
70°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.9
72.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.1
75°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.1	3.1
77.5°	1.5	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.1	3.1
80°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.1	3.1
82.5°	1.5	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.1	3.1
85°	1.5	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.1	3.1
87.5°	1.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.1	3.1	3.1
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°	193.9	193.9	193.9	193.9	193.9	193.9	193.9	193.9	193.9	193.9	193.9
2.5°	180.8	175.4	170.7	172.3	169.2	163.8	162.2	158.4	153.7	153.0	153.0
5°	167.6	159.1	152.2	151.4	148.3	142.1	140.6	136.7	132.9	132.1	131.3
7.5°	151.4	142.1	136.0	134.4	132.1	126.7	125.9	122.1	119.7	118.2	118.2
10°	135.2	126.7	121.3	120.5	119.0	114.3	113.6	110.5	108.2	107.4	106.6
12.5°	119.7	112.8	108.2	107.4	105.8	102.0	101.2	98.9	97.3	96.6	96.6
15°	105.1	98.9	95.0	94.2	93.5	89.6	89.6	88.1	87.3	87.3	88.1
17.5°	90.4	85.0	81.9	81.1	81.1	78.0	78.8	78.0	78.0	78.0	79.6
20°	75.7	71.1	68.8	69.5	68.0	67.2	68.0	68.0	68.0	69.5	71.8
22.5°	63.3	59.5	57.2	57.9	57.9	57.2	57.9	58.7	60.3	62.6	64.9
25°	51.8	48.7	47.9	48.7	48.7	48.7	50.2	51.8	53.3	55.6	57.9
27.5°	41.7	39.4	39.4	40.2	40.9	40.9	43.3	44.8	47.1	49.4	51.8
30°	33.2	32.4	32.4	34.0	34.0	34.8	37.9	39.4	40.9	43.3	45.6
32.5°	26.3	26.3	27.0	28.6	28.6	30.1	32.4	34.0	35.5	37.9	40.2
35°	21.6	22.4	23.2	23.9	24.7	25.5	27.8	29.4	30.9	33.2	34.8
37.5°	17.8	18.5	19.3	20.9	20.9	21.6	23.9	25.5	26.3	28.6	30.9
40°	14.7	15.5	16.2	17.8	17.8	18.5	20.9	21.6	22.4	24.7	27.0
42.5°	12.4	13.1	13.9	14.7	15.5	16.2	17.8	18.5	20.1	21.6	23.2
45°	10.0	10.8	11.6	12.4	13.1	13.9	14.7	16.2	17.0	18.5	20.1
47.5°	8.5	9.3	10.0	10.8	11.6	11.6	13.1	13.9	14.7	16.2	17.8
50°	7.7	8.5	9.3	9.3	10.0	10.8	11.6	12.4	13.1	13.9	15.5
52.5°	6.2	7.0	7.7	8.5	8.5	9.3	10.0	10.8	11.6	12.4	13.1
55°	6.2	6.2	7.0	7.7	7.7	8.5	9.3	10.0	10.0	10.8	11.6
57.5°	5.4	6.2	6.2	7.0	7.0	7.7	8.5	8.5	9.3	9.3	10.0
60°	4.6	5.4	6.2	6.2	6.2	7.0	7.0	7.7	7.7	8.5	8.5
62.5°	4.6	5.4	5.4	6.2	6.2	6.2	7.0	7.0	7.0	7.7	7.7
65°	4.6	4.6	5.4	5.4	5.4	5.4	6.2	6.2	6.2	7.0	7.0
67.5°	3.9	4.6	4.6	4.6	5.4	5.4	5.4	5.4	5.4	6.2	6.2
70°	3.9	3.9	4.6	4.6	4.6	4.6	4.6	5.4	5.4	5.4	5.4
72.5°	3.9	3.9	3.9	3.9	4.6	4.6	4.6	4.6	4.6	4.6	4.6
75°	3.1	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
77.5°	3.1	3.1	3.1	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
80°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
82.5°	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.3	2.3
85°	3.1	3.1	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
87.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.5	1.5	1.5
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: P182834

CATALOG NUMBER: LDSQA4A18927D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	193.9	193.9	193.9	193.9	193.9	193.9	193.9	193.9
2.5°	149.9	148.3	147.6	149.9	146.8	148.3	147.6	148.3
5°	129.0	127.5	126.7	129.0	125.9	127.5	125.9	127.5
7.5°	115.9	115.1	114.3	115.9	113.6	115.1	114.3	115.1
10°	105.1	104.3	103.5	105.8	103.5	105.1	104.3	105.1
12.5°	95.8	95.8	95.0	96.6	95.0	96.6	95.8	96.6
15°	87.3	88.1	87.3	88.8	88.1	89.6	88.8	90.4
17.5°	80.3	81.1	81.1	83.4	82.7	85.0	84.2	85.0
20°	73.4	74.2	74.9	76.5	76.5	78.8	78.0	79.6
22.5°	66.4	68.0	68.0	70.3	70.3	72.6	72.6	73.4
25°	59.5	61.8	62.6	64.1	64.9	67.2	67.2	68.0
27.5°	54.1	55.6	56.4	58.7	59.5	61.8	61.8	63.3
30°	47.9	50.2	51.0	52.5	53.3	55.6	55.6	57.2
32.5°	42.5	44.0	45.6	47.1	47.9	50.2	50.2	51.8
35°	37.1	39.4	40.2	41.7	43.3	45.6	45.6	47.1
37.5°	32.4	34.8	35.5	37.1	38.6	40.9	40.9	42.5
40°	28.6	30.9	31.7	33.2	34.0	37.1	37.1	37.9
42.5°	25.5	27.0	27.8	29.4	30.1	31.7	31.7	33.2
45°	21.6	23.2	23.9	24.7	26.3	27.8	27.8	28.6
47.5°	18.5	20.1	20.9	21.6	22.4	23.9	23.9	25.5
50°	16.2	17.0	17.8	18.5	19.3	20.9	20.9	21.6
52.5°	13.9	14.7	15.5	16.2	17.0	17.8	18.5	19.3
55°	12.4	13.1	13.1	13.9	14.7	15.5	15.5	16.2
57.5°	10.8	11.6	11.6	11.6	12.4	13.1	13.1	13.9
60°	9.3	10.0	10.0	10.0	10.8	10.8	10.8	11.6
62.5°	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
65°	7.0	7.0	7.0	7.0	7.0	7.0	6.2	7.0
67.5°	6.2	6.2	6.2	5.4	5.4	5.4	5.4	5.4
70°	5.4	5.4	5.4	4.6	4.6	4.6	3.9	3.9
72.5°	4.6	4.6	4.6	3.9	3.9	3.9	3.1	3.1
75°	3.9	3.9	3.9	3.9	3.1	3.1	3.1	3.1
77.5°	3.1	3.1	3.1	3.1	3.1	3.1	2.3	2.3
80°	3.1	2.3	2.3	2.3	2.3	2.3	2.3	2.3
82.5°	2.3	2.3	2.3	2.3	1.5	1.5	1.5	1.5
85°	1.5	1.5	1.5	1.5	1.5	1.5	0.8	0.8
87.5°	1.5	0.8	0.8	0.8	0.8	0.8	0.8	0.8
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)