

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: P182855

Luminaire Tested: **LDSQA4A28830D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182855
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: LDSQA4A28830D010TE LAR35FL 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 35° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2731.3 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

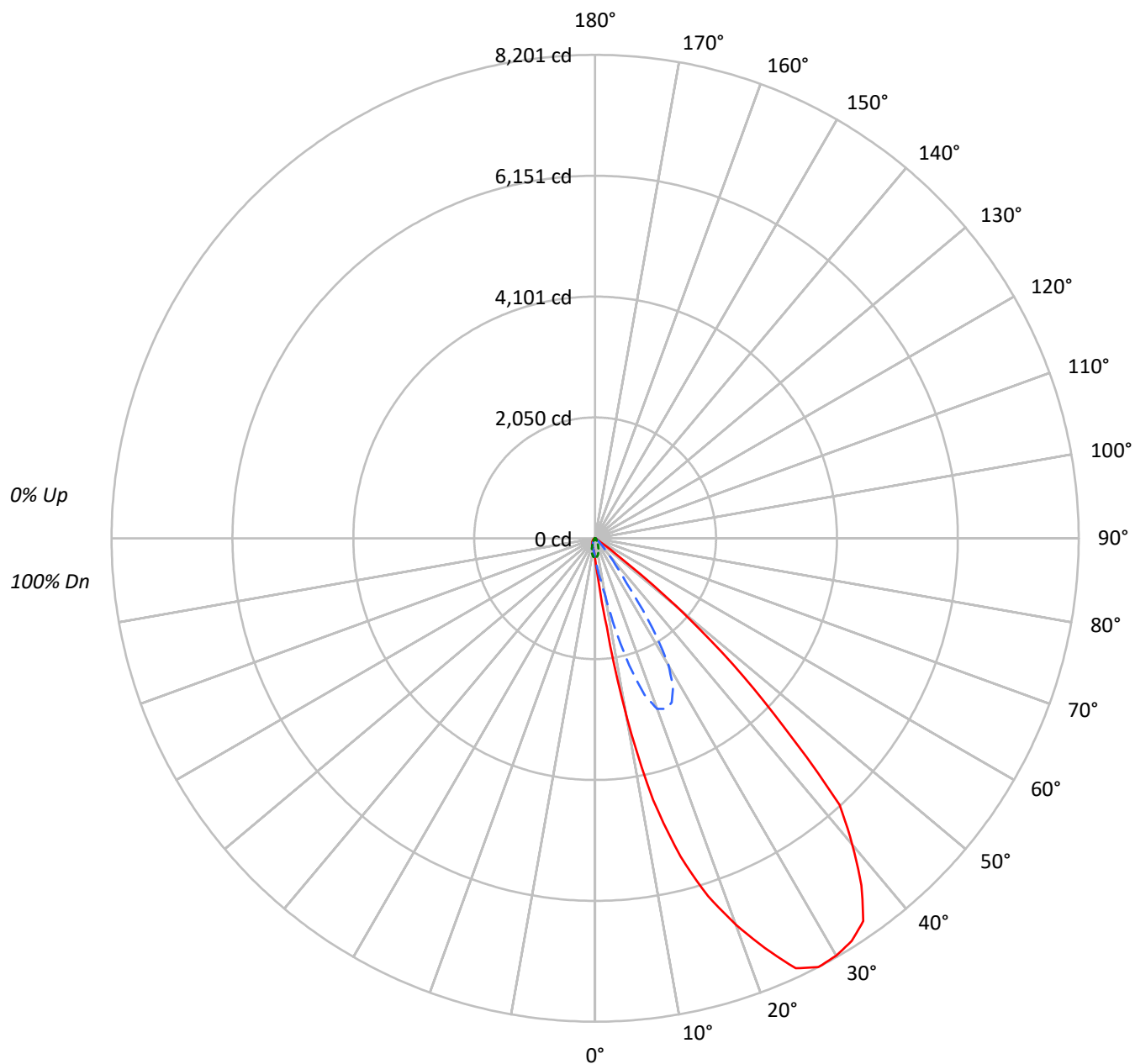
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
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°	32715	32715	32715
5°	76678	30875	21588
10°	302969	27130	18002
15°	560697	21723	15786
20°	718948	15814	14289
25°	860199	11213	12656
30°	914663	7372	11141
35°	937400	4459	9709
40°	858095	2896	8334
45°	619197	2028	6823
50°	270316	1628	5682
55°	18629	1368	4780
60°	3391	1298	3914
65°	1238	1238	2774
70°	1133	1530	1898
75°	1011	2021	2021
80°	0	3013	2232
85°	0	6002	1445



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.2	1.8
10°-20°	386.6	14.2
20°-30°	809.4	29.6
30°-40°	900.9	33.0
40°-50°	517.2	18.9
50°-60°	51.7	1.9
60°-70°	8.1	0.3
70°-80°	5.1	0.2
80°-90°	3.1	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°	1245.2	45.6
0°-40°	2146.1	78.6
0°-60°	2714.9	99.4
0°-90°	2731.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2731.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	338	338	338	338	338	
5°	788	544	318	231	222	145
15°	5591	2232	217	152	157	1580
25°	8048	3072	105	93	118	3644
35°	7926	938	38	54	82	4840
45°	4520	113	15	30	50	3451
55°	110	16	8	18	28	329
65°	5	4	5	11	12	7
75°	3	3	5	7	5	2
85°	0	3	5	4	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°	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7
2.5°	504.6	493.8	483.0	476.3	469.6	479.0	472.3	469.6	450.7	441.3	433.3
5°	788.5	768.3	738.7	714.5	690.2	695.6	676.8	653.9	606.8	573.2	543.6
7.5°	1521.8	1472.0	1380.5	1291.7	1202.9	1186.7	1127.5	1025.3	893.4	793.9	707.7
10°	3079.9	2929.2	2761.0	2579.3	2366.8	2307.6	2160.9	1883.7	1581.0	1235.2	984.9
12.5°	4546.5	4477.9	4280.1	4044.6	3814.5	3673.2	3521.2	3063.7	2583.4	2026.3	1560.8
15°	5590.6	5548.9	5375.3	5161.4	4913.8	4822.3	4636.6	4180.5	3573.7	2907.6	2232.2
17.5°	6364.3	6293.0	6111.3	5878.5	5585.2	5507.2	5285.2	4831.7	4202.0	3533.3	2783.9
20°	6973.8	6929.4	6693.9	6414.1	6062.9	5968.7	5709.0	5236.7	4551.9	3841.4	3078.5
22.5°	7521.4	7446.1	7156.8	6823.1	6422.1	6321.2	6031.9	5513.9	4777.9	3986.7	3131.0
25°	8047.5	7933.1	7582.0	7144.7	6673.7	6536.5	6219.0	5670.0	4861.3	3998.9	3071.8
27.5°	8200.9	8143.0	7818.8	7310.2	6765.2	6610.5	6279.5	5705.0	4830.4	3888.5	2859.2
30°	8176.7	8128.2	7857.8	7326.3	6749.1	6586.3	6249.9	5597.3	4650.1	3600.6	2483.8
32.5°	8100.0	8081.1	7754.2	7186.4	6598.4	6420.8	6057.5	5329.6	4312.4	3162.0	1815.1
35°	7926.4	7852.4	7444.7	6910.5	6345.4	6150.3	5739.9	4946.1	3867.0	2302.2	937.8
37.5°	7417.8	7359.9	7038.4	6570.1	6019.8	5769.6	5336.3	4451.0	2993.8	1309.2	561.1
40°	6785.4	6757.2	6504.2	6085.7	5497.8	5215.2	4744.3	3642.3	1827.2	744.1	370.0
42.5°	6136.9	6128.8	5858.4	5421.1	4783.3	4459.0	3970.6	2456.9	971.5	449.4	213.9
45°	4519.6	4568.0	4379.6	4117.3	3630.2	3394.7	2761.0	1266.1	559.7	248.9	113.0
47.5°	3170.0	3116.2	2782.5	2323.7	1878.3	1590.4	1202.9	598.8	298.7	130.5	64.6
50°	1793.6	1803.0	1501.6	1215.0	796.5	631.0	479.0	301.4	144.0	68.6	39.0
52.5°	468.2	489.8	422.5	363.3	309.5	251.6	203.2	130.5	68.6	40.4	25.6
55°	110.3	114.4	106.3	99.6	94.2	83.4	74.0	56.5	37.7	25.6	16.1
57.5°	39.0	40.4	39.0	39.0	37.7	36.3	33.6	29.6	22.9	16.1	10.8
60°	17.5	18.8	17.5	18.8	18.8	18.8	18.8	18.8	13.5	9.4	6.7
62.5°	8.1	8.1	8.1	8.1	9.4	9.4	10.8	10.8	8.1	6.7	5.4
65°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	4.0
67.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
70°	4.0	4.0	4.0	2.7	2.7	2.7	2.7	2.7	2.7	2.7	4.0
72.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
75°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
77.5°	0.0	0.0	0.0	1.3	1.3	1.3	1.3	2.7	2.7	2.7	2.7
80°	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	2.7	2.7	2.7
82.5°	0.0	0.0	0.0	1.3	1.3	1.3	1.3	1.3	2.7	2.7	2.7
85°	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	2.7	2.7	2.7
87.5°	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3	2.7	2.7	2.7
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°	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7
2.5°	418.5	417.1	402.3	391.5	386.2	378.1	368.7	355.2	340.4	327.0	321.6
5°	508.6	491.1	460.2	434.6	422.5	410.4	388.9	364.6	341.8	317.5	305.4
7.5°	625.7	574.5	514.0	466.9	446.7	426.5	395.6	361.9	331.0	298.7	281.2
10°	785.8	667.4	562.4	487.1	457.5	430.6	386.2	344.5	310.8	275.8	253.0
12.5°	1123.5	830.2	613.6	496.5	457.5	422.5	368.7	320.2	282.6	246.2	224.7
15°	1618.6	1120.8	725.2	505.9	448.1	403.7	341.8	289.3	248.9	216.6	196.4
17.5°	2018.3	1388.6	863.8	530.1	435.9	378.1	306.8	251.6	213.9	184.3	168.2
20°	2220.1	1501.6	927.1	534.2	406.3	337.7	265.1	212.6	179.0	153.4	139.9
22.5°	2216.1	1465.3	870.5	468.2	356.6	292.0	223.4	174.9	148.0	127.8	117.1
25°	2076.1	1297.1	726.6	374.1	287.9	242.2	181.6	141.3	119.8	104.9	95.5
27.5°	1813.7	1053.5	542.2	277.2	224.7	191.1	141.3	113.0	95.5	84.8	78.0
30°	1423.6	705.0	341.8	205.9	170.9	144.0	109.0	87.5	75.3	65.9	61.9
32.5°	784.4	367.3	230.1	150.7	125.1	104.9	80.7	63.2	55.2	48.4	47.1
35°	433.3	259.7	164.2	100.9	83.4	71.3	55.2	45.7	40.4	37.7	37.7
37.5°	306.8	166.8	98.2	63.2	53.8	47.1	37.7	32.3	30.9	29.6	29.6
40°	184.3	98.2	59.2	41.7	36.3	32.3	28.3	24.2	24.2	22.9	24.2
42.5°	100.9	59.2	40.4	29.6	25.6	24.2	20.2	18.8	18.8	18.8	20.2
45°	60.5	39.0	28.3	21.5	18.8	16.1	14.8	13.5	14.8	14.8	16.1
47.5°	39.0	28.3	18.8	13.5	12.1	10.8	9.4	10.8	10.8	12.1	13.5
50°	26.9	17.5	12.1	8.1	8.1	6.7	8.1	8.1	9.4	10.8	12.1
52.5°	17.5	12.1	8.1	6.7	5.4	5.4	5.4	6.7	8.1	9.4	10.8
55°	10.8	8.1	6.7	5.4	5.4	5.4	5.4	5.4	6.7	8.1	9.4
57.5°	8.1	6.7	5.4	4.0	4.0	4.0	5.4	5.4	6.7	6.7	8.1
60°	5.4	5.4	4.0	4.0	4.0	4.0	4.0	5.4	5.4	6.7	8.1
62.5°	5.4	5.4	4.0	4.0	4.0	4.0	5.4	5.4	5.4	6.7	6.7
65°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.4	5.4	5.4	6.7
67.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.4	5.4	6.7
70°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.4	5.4	6.7
72.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.4	5.4	5.4
75°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.4	5.4	5.4	5.4
77.5°	2.7	4.0	4.0	4.0	4.0	4.0	4.0	5.4	5.4	5.4	5.4
80°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.4	5.4	5.4	5.4
82.5°	2.7	4.0	4.0	4.0	4.0	4.0	4.0	5.4	5.4	5.4	5.4
85°	2.7	4.0	4.0	4.0	4.0	4.0	4.0	5.4	5.4	5.4	5.4
87.5°	2.7	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.4	5.4	5.4
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°	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7
2.5°	314.8	305.4	297.4	300.0	294.7	285.2	282.6	275.8	267.8	266.4	266.4
5°	292.0	277.2	265.1	263.7	258.3	247.6	244.9	238.2	231.4	230.1	228.7
7.5°	263.7	247.6	236.8	234.1	230.1	220.7	219.3	212.6	208.6	205.9	205.9
10°	235.5	220.7	211.2	209.9	207.2	199.1	197.8	192.4	188.4	187.0	185.7
12.5°	208.6	196.4	188.4	187.0	184.3	177.6	176.3	172.2	169.5	168.2	168.2
15°	183.0	172.2	165.5	164.2	162.8	156.1	156.1	153.4	152.0	152.0	153.4
17.5°	157.4	148.0	142.6	141.3	141.3	135.9	137.2	135.9	135.9	135.9	138.6
20°	131.9	123.8	119.8	121.1	118.4	117.1	118.4	118.4	118.4	121.1	125.1
22.5°	110.3	103.6	99.6	100.9	100.9	99.6	100.9	102.3	104.9	109.0	113.0
25°	90.1	84.8	83.4	84.8	84.8	84.8	87.5	90.1	92.8	96.9	100.9
27.5°	72.7	68.6	68.6	70.0	71.3	71.3	75.3	78.0	82.1	86.1	90.1
30°	57.9	56.5	56.5	59.2	59.2	60.5	65.9	68.6	71.3	75.3	79.4
32.5°	45.7	45.7	47.1	49.8	49.8	52.5	56.5	59.2	61.9	65.9	70.0
35°	37.7	39.0	40.4	41.7	43.1	44.4	48.4	51.1	53.8	57.9	60.5
37.5°	30.9	32.3	33.6	36.3	36.3	37.7	41.7	44.4	45.7	49.8	53.8
40°	25.6	26.9	28.3	30.9	30.9	32.3	36.3	37.7	39.0	43.1	47.1
42.5°	21.5	22.9	24.2	25.6	26.9	28.3	30.9	32.3	35.0	37.7	40.4
45°	17.5	18.8	20.2	21.5	22.9	24.2	25.6	28.3	29.6	32.3	35.0
47.5°	14.8	16.1	17.5	18.8	20.2	20.2	22.9	24.2	25.6	28.3	30.9
50°	13.5	14.8	16.1	16.1	17.5	18.8	20.2	21.5	22.9	24.2	26.9
52.5°	10.8	12.1	13.5	14.8	14.8	16.1	17.5	18.8	20.2	21.5	22.9
55°	10.8	10.8	12.1	13.5	13.5	14.8	16.1	17.5	17.5	18.8	20.2
57.5°	9.4	10.8	10.8	12.1	12.1	13.5	14.8	14.8	16.1	16.1	17.5
60°	8.1	9.4	10.8	10.8	10.8	12.1	12.1	13.5	13.5	14.8	14.8
62.5°	8.1	9.4	9.4	10.8	10.8	10.8	12.1	12.1	12.1	13.5	13.5
65°	8.1	8.1	9.4	9.4	9.4	9.4	10.8	10.8	10.8	12.1	12.1
67.5°	6.7	8.1	8.1	8.1	9.4	9.4	9.4	9.4	9.4	10.8	10.8
70°	6.7	6.7	8.1	8.1	8.1	8.1	8.1	9.4	9.4	9.4	9.4
72.5°	6.7	6.7	6.7	6.7	8.1	8.1	8.1	8.1	8.1	8.1	8.1
75°	5.4	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
77.5°	5.4	5.4	5.4	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
80°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
82.5°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	4.0	4.0
85°	5.4	5.4	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
87.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.7	2.7	2.7
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: P182855

CATALOG NUMBER: LDSQA4A28830D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	337.7	337.7	337.7	337.7	337.7	337.7	337.7	337.7
2.5°	261.0	258.3	257.0	261.0	255.6	258.3	257.0	258.3
5°	224.7	222.0	220.7	224.7	219.3	222.0	219.3	222.0
7.5°	201.8	200.5	199.1	201.8	197.8	200.5	199.1	200.5
10°	183.0	181.6	180.3	184.3	180.3	183.0	181.6	183.0
12.5°	166.8	166.8	165.5	168.2	165.5	168.2	166.8	168.2
15°	152.0	153.4	152.0	154.7	153.4	156.1	154.7	157.4
17.5°	139.9	141.3	141.3	145.3	144.0	148.0	146.7	148.0
20°	127.8	129.2	130.5	133.2	133.2	137.2	135.9	138.6
22.5°	115.7	118.4	118.4	122.4	122.4	126.5	126.5	127.8
25°	103.6	107.6	109.0	111.7	113.0	117.1	117.1	118.4
27.5°	94.2	96.9	98.2	102.3	103.6	107.6	107.6	110.3
30°	83.4	87.5	88.8	91.5	92.8	96.9	96.9	99.6
32.5°	74.0	76.7	79.4	82.1	83.4	87.5	87.5	90.1
35°	64.6	68.6	70.0	72.7	75.3	79.4	79.4	82.1
37.5°	56.5	60.5	61.9	64.6	67.3	71.3	71.3	74.0
40°	49.8	53.8	55.2	57.9	59.2	64.6	64.6	65.9
42.5°	44.4	47.1	48.4	51.1	52.5	55.2	55.2	57.9
45°	37.7	40.4	41.7	43.1	45.7	48.4	48.4	49.8
47.5°	32.3	35.0	36.3	37.7	39.0	41.7	41.7	44.4
50°	28.3	29.6	30.9	32.3	33.6	36.3	36.3	37.7
52.5°	24.2	25.6	26.9	28.3	29.6	30.9	32.3	33.6
55°	21.5	22.9	22.9	24.2	25.6	26.9	26.9	28.3
57.5°	18.8	20.2	20.2	20.2	21.5	22.9	22.9	24.2
60°	16.1	17.5	17.5	17.5	18.8	18.8	18.8	20.2
62.5°	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
65°	12.1	12.1	12.1	12.1	12.1	12.1	10.8	12.1
67.5°	10.8	10.8	10.8	9.4	9.4	9.4	9.4	9.4
70°	9.4	9.4	9.4	8.1	8.1	8.1	6.7	6.7
72.5°	8.1	8.1	8.1	6.7	6.7	6.7	5.4	5.4
75°	6.7	6.7	6.7	6.7	5.4	5.4	5.4	5.4
77.5°	5.4	5.4	5.4	5.4	5.4	5.4	4.0	4.0
80°	5.4	4.0	4.0	4.0	4.0	4.0	4.0	4.0
82.5°	4.0	4.0	4.0	4.0	2.7	2.7	2.7	2.7
85°	2.7	2.7	2.7	2.7	2.7	2.7	1.3	1.3
87.5°	2.7	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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)