

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: P182859

Luminaire Tested: **LDSQA4A28930D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182859
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: LDSQA4A28930D010TE 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: 2247.3 lumens
Efficiency: N/A
Efficacy: 50.5 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

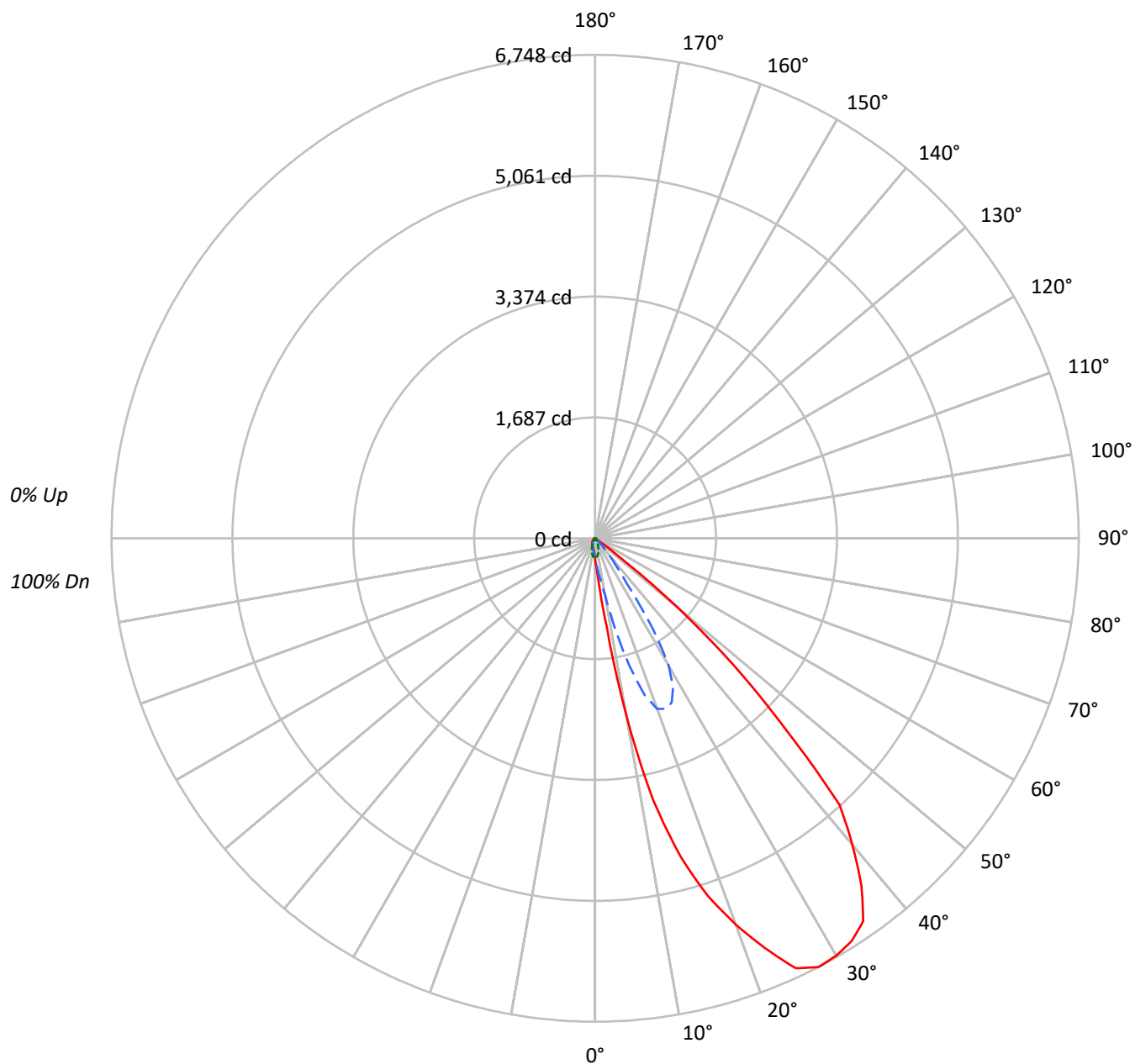
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	26922	26922	26922
5°	63093	25410	17767
10°	249279	22330	14815
15°	461347	17872	12988
20°	591556	13010	11753
25°	707774	9235	10411
30°	752586	6063	9162
35°	771300	3666	7983
40°	706049	2377	6854
45°	509471	1671	5617
50°	222420	1341	4672
55°	15336	1115	3918
60°	2790	1066	3216
65°	1009	1009	2292
70°	935	1246	1558
75°	823	1647	1647
80°	0	2455	1841
85°	0	4891	1223



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.5	1.8
10°-20°	318.1	14.2
20°-30°	665.9	29.6
30°-40°	741.3	33.0
40°-50°	425.5	18.9
50°-60°	42.5	1.9
60°-70°	6.7	0.3
70°-80°	4.2	0.2
80°-90°	2.6	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°	1024.5	45.6
0°-40°	1765.8	78.6
0°-60°	2233.8	99.4
0°-90°	2247.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2247.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	278	278	278	278	278	
5°	649	447	261	190	183	119
15°	4600	1837	178	125	130	1300
25°	6622	2528	86	76	97	2999
35°	6522	772	31	44	68	3982
45°	3719	93	12	24	41	2839
55°	91	13	7	14	23	271
65°	4	3	4	9	10	6
75°	2	2	4	6	4	2
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°	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9
2.5°	415.2	406.3	397.4	391.9	386.4	394.1	388.6	386.4	370.9	363.1	356.5
5°	648.8	632.2	607.8	587.9	567.9	572.4	556.9	538.0	499.3	471.6	447.3
7.5°	1252.1	1211.2	1135.9	1062.8	989.7	976.5	927.7	843.6	735.1	653.2	582.3
10°	2534.1	2410.1	2271.8	2122.3	1947.4	1898.7	1778.0	1549.9	1300.8	1016.3	810.4
12.5°	3740.9	3684.4	3521.7	3327.9	3138.6	3022.4	2897.3	2520.9	2125.6	1667.3	1284.2
15°	4600.0	4565.7	4422.8	4246.8	4043.1	3967.8	3815.1	3439.7	2940.4	2392.4	1836.7
17.5°	5236.6	5177.9	5028.4	4836.9	4595.6	4531.3	4348.7	3975.6	3457.5	2907.2	2290.6
20°	5738.1	5701.5	5507.8	5277.5	4988.6	4911.1	4697.4	4308.8	3745.3	3160.8	2533.0
22.5°	6188.7	6126.7	5888.6	5614.1	5284.2	5201.1	4963.1	4536.9	3931.3	3280.3	2576.2
25°	6621.5	6527.4	6238.5	5878.7	5491.2	5378.3	5117.0	4665.3	3999.9	3290.3	2527.5
27.5°	6747.7	6700.1	6433.3	6014.9	5566.5	5439.2	5166.8	4694.1	3974.5	3199.5	2352.6
30°	6727.8	6688.0	6465.4	6028.1	5553.2	5419.2	5142.5	4605.5	3826.1	2962.6	2043.7
32.5°	6664.7	6649.2	6380.2	5913.0	5429.2	5283.1	4984.1	4385.2	3548.2	2601.7	1493.5
35°	6521.9	6461.0	6125.6	5686.0	5221.1	5060.5	4722.9	4069.7	3181.8	1894.2	771.6
37.5°	6103.4	6055.8	5791.2	5405.9	4953.1	4747.2	4390.7	3662.3	2463.3	1077.2	461.7
40°	5583.1	5559.8	5351.7	5007.4	4523.6	4291.1	3903.6	2996.9	1503.4	612.2	304.5
42.5°	5049.5	5042.8	4820.3	4460.5	3935.7	3668.9	3267.0	2021.6	799.3	369.8	176.0
45°	3718.7	3758.6	3603.6	3387.7	2986.9	2793.2	2271.8	1041.8	460.6	204.8	93.0
47.5°	2608.3	2564.0	2289.5	1912.0	1545.5	1308.6	989.7	492.7	245.8	107.4	53.1
50°	1475.8	1483.5	1235.5	999.7	655.4	519.2	394.1	248.0	118.5	56.5	32.1
52.5°	385.3	403.0	347.6	298.9	254.6	207.0	167.2	107.4	56.5	33.2	21.0
55°	90.8	94.1	87.5	81.9	77.5	68.6	60.9	46.5	31.0	21.0	13.3
57.5°	32.1	33.2	32.1	32.1	31.0	29.9	27.7	24.4	18.8	13.3	8.9
60°	14.4	15.5	14.4	15.5	15.5	15.5	15.5	15.5	11.1	7.7	5.5
62.5°	6.6	6.6	6.6	6.6	7.7	7.7	8.9	8.9	6.6	5.5	4.4
65°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	3.3
67.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
70°	3.3	3.3	3.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	3.3
72.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
75°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	2.2	2.2	2.2	2.2
80°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2
82.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2
85°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	2.2	2.2	2.2
87.5°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	2.2	2.2	2.2
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°	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9
2.5°	344.3	343.2	331.0	322.2	317.7	311.1	303.3	292.3	280.1	269.0	264.6
5°	418.5	404.1	378.6	357.6	347.6	337.7	320.0	300.0	281.2	261.3	251.3
7.5°	514.8	472.7	422.9	384.2	367.6	350.9	325.5	297.8	272.3	245.8	231.4
10°	646.5	549.1	462.8	400.8	376.4	354.3	317.7	283.4	255.7	227.0	208.1
12.5°	924.4	683.1	504.8	408.5	376.4	347.6	303.3	263.5	232.5	202.6	184.9
15°	1331.8	922.2	596.7	416.3	368.7	332.1	281.2	238.0	204.8	178.2	161.6
17.5°	1660.6	1142.5	710.8	436.2	358.7	311.1	252.4	207.0	176.0	151.7	138.4
20°	1826.7	1235.5	762.8	439.5	334.3	277.9	218.1	174.9	147.2	126.2	115.1
22.5°	1823.4	1205.6	716.3	385.3	293.4	240.2	183.8	143.9	121.8	105.2	96.3
25°	1708.2	1067.2	597.8	307.8	236.9	199.3	149.5	116.2	98.5	86.4	78.6
27.5°	1492.4	866.9	446.2	228.1	184.9	157.2	116.2	93.0	78.6	69.7	64.2
30°	1171.3	580.1	281.2	169.4	140.6	118.5	89.7	72.0	62.0	54.2	50.9
32.5°	645.4	302.2	189.3	124.0	103.0	86.4	66.4	52.0	45.4	39.9	38.7
35°	356.5	213.7	135.1	83.0	68.6	58.7	45.4	37.6	33.2	31.0	31.0
37.5°	252.4	137.3	80.8	52.0	44.3	38.7	31.0	26.6	25.5	24.4	24.4
40°	151.7	80.8	48.7	34.3	29.9	26.6	23.2	19.9	19.9	18.8	19.9
42.5°	83.0	48.7	33.2	24.4	21.0	19.9	16.6	15.5	15.5	15.5	16.6
45°	49.8	32.1	23.2	17.7	15.5	13.3	12.2	11.1	12.2	12.2	13.3
47.5°	32.1	23.2	15.5	11.1	10.0	8.9	7.7	8.9	8.9	10.0	11.1
50°	22.1	14.4	10.0	6.6	6.6	5.5	6.6	6.6	7.7	8.9	10.0
52.5°	14.4	10.0	6.6	5.5	4.4	4.4	4.4	5.5	6.6	7.7	8.9
55°	8.9	6.6	5.5	4.4	4.4	4.4	4.4	4.4	5.5	6.6	7.7
57.5°	6.6	5.5	4.4	3.3	3.3	3.3	4.4	4.4	5.5	5.5	6.6
60°	4.4	4.4	3.3	3.3	3.3	3.3	3.3	4.4	4.4	5.5	6.6
62.5°	4.4	4.4	3.3	3.3	3.3	3.3	4.4	4.4	4.4	5.5	5.5
65°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	4.4	5.5
67.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	5.5
70°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	5.5
72.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	4.4
75°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	4.4	4.4
77.5°	2.2	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	4.4	4.4
80°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	4.4	4.4
82.5°	2.2	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	4.4	4.4
85°	2.2	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	4.4	4.4
87.5°	2.2	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.4	4.4	4.4
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°	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9
2.5°	259.1	251.3	244.7	246.9	242.5	234.7	232.5	227.0	220.3	219.2	219.2
5°	240.2	228.1	218.1	217.0	212.6	203.7	201.5	196.0	190.4	189.3	188.2
7.5°	217.0	203.7	194.8	192.6	189.3	181.6	180.5	174.9	171.6	169.4	169.4
10°	193.7	181.6	173.8	172.7	170.5	163.9	162.7	158.3	155.0	153.9	152.8
12.5°	171.6	161.6	155.0	153.9	151.7	146.1	145.0	141.7	139.5	138.4	138.4
15°	150.6	141.7	136.2	135.1	134.0	128.4	128.4	126.2	125.1	125.1	126.2
17.5°	129.5	121.8	117.4	116.2	116.2	111.8	112.9	111.8	111.8	111.8	114.0
20°	108.5	101.9	98.5	99.6	97.4	96.3	97.4	97.4	97.4	99.6	103.0
22.5°	90.8	85.2	81.9	83.0	83.0	81.9	83.0	84.1	86.4	89.7	93.0
25°	74.2	69.7	68.6	69.7	69.7	69.7	72.0	74.2	76.4	79.7	83.0
27.5°	59.8	56.5	56.5	57.6	58.7	58.7	62.0	64.2	67.5	70.9	74.2
30°	47.6	46.5	46.5	48.7	48.7	49.8	54.2	56.5	58.7	62.0	65.3
32.5°	37.6	37.6	38.7	41.0	41.0	43.2	46.5	48.7	50.9	54.2	57.6
35°	31.0	32.1	33.2	34.3	35.4	36.5	39.9	42.1	44.3	47.6	49.8
37.5°	25.5	26.6	27.7	29.9	29.9	31.0	34.3	36.5	37.6	41.0	44.3
40°	21.0	22.1	23.2	25.5	25.5	26.6	29.9	31.0	32.1	35.4	38.7
42.5°	17.7	18.8	19.9	21.0	22.1	23.2	25.5	26.6	28.8	31.0	33.2
45°	14.4	15.5	16.6	17.7	18.8	19.9	21.0	23.2	24.4	26.6	28.8
47.5°	12.2	13.3	14.4	15.5	16.6	16.6	18.8	19.9	21.0	23.2	25.5
50°	11.1	12.2	13.3	13.3	14.4	15.5	16.6	17.7	18.8	19.9	22.1
52.5°	8.9	10.0	11.1	12.2	12.2	13.3	14.4	15.5	16.6	17.7	18.8
55°	8.9	8.9	10.0	11.1	11.1	12.2	13.3	14.4	14.4	15.5	16.6
57.5°	7.7	8.9	8.9	10.0	10.0	11.1	12.2	12.2	13.3	13.3	14.4
60°	6.6	7.7	8.9	8.9	8.9	10.0	10.0	11.1	11.1	12.2	12.2
62.5°	6.6	7.7	7.7	8.9	8.9	8.9	10.0	10.0	10.0	11.1	11.1
65°	6.6	6.6	7.7	7.7	7.7	7.7	8.9	8.9	8.9	10.0	10.0
67.5°	5.5	6.6	6.6	6.6	7.7	7.7	7.7	7.7	7.7	8.9	8.9
70°	5.5	5.5	6.6	6.6	6.6	6.6	6.6	7.7	7.7	7.7	7.7
72.5°	5.5	5.5	5.5	5.5	6.6	6.6	6.6	6.6	6.6	6.6	6.6
75°	4.4	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
77.5°	4.4	4.4	4.4	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
80°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
82.5°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	3.3	3.3
85°	4.4	4.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
87.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.2	2.2	2.2
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: P182859

CATALOG NUMBER: LDSQA4A28930D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9
2.5°	214.8	212.6	211.5	214.8	210.3	212.6	211.5	212.6
5°	184.9	182.7	181.6	184.9	180.5	182.7	180.5	182.7
7.5°	166.1	165.0	163.9	166.1	162.7	165.0	163.9	165.0
10°	150.6	149.5	148.4	151.7	148.4	150.6	149.5	150.6
12.5°	137.3	137.3	136.2	138.4	136.2	138.4	137.3	138.4
15°	125.1	126.2	125.1	127.3	126.2	128.4	127.3	129.5
17.5°	115.1	116.2	116.2	119.6	118.5	121.8	120.7	121.8
20°	105.2	106.3	107.4	109.6	109.6	112.9	111.8	114.0
22.5°	95.2	97.4	97.4	100.7	100.7	104.1	104.1	105.2
25°	85.2	88.6	89.7	91.9	93.0	96.3	96.3	97.4
27.5°	77.5	79.7	80.8	84.1	85.2	88.6	88.6	90.8
30°	68.6	72.0	73.1	75.3	76.4	79.7	79.7	81.9
32.5°	60.9	63.1	65.3	67.5	68.6	72.0	72.0	74.2
35°	53.1	56.5	57.6	59.8	62.0	65.3	65.3	67.5
37.5°	46.5	49.8	50.9	53.1	55.4	58.7	58.7	60.9
40°	41.0	44.3	45.4	47.6	48.7	53.1	53.1	54.2
42.5°	36.5	38.7	39.9	42.1	43.2	45.4	45.4	47.6
45°	31.0	33.2	34.3	35.4	37.6	39.9	39.9	41.0
47.5°	26.6	28.8	29.9	31.0	32.1	34.3	34.3	36.5
50°	23.2	24.4	25.5	26.6	27.7	29.9	29.9	31.0
52.5°	19.9	21.0	22.1	23.2	24.4	25.5	26.6	27.7
55°	17.7	18.8	18.8	19.9	21.0	22.1	22.1	23.2
57.5°	15.5	16.6	16.6	16.6	17.7	18.8	18.8	19.9
60°	13.3	14.4	14.4	14.4	15.5	15.5	15.5	16.6
62.5°	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2
65°	10.0	10.0	10.0	10.0	10.0	10.0	8.9	10.0
67.5°	8.9	8.9	8.9	7.7	7.7	7.7	7.7	7.7
70°	7.7	7.7	7.7	6.6	6.6	6.6	5.5	5.5
72.5°	6.6	6.6	6.6	5.5	5.5	5.5	4.4	4.4
75°	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4
77.5°	4.4	4.4	4.4	4.4	4.4	4.4	3.3	3.3
80°	4.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3
82.5°	3.3	3.3	3.3	3.3	2.2	2.2	2.2	2.2
85°	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1
87.5°	2.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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)