

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: P182830

Luminaire Tested: **LDSQA4A18827D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182830
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: LDSQA4A18827D010TE LAR35FL 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 35° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1954.0 lumens
Efficiency: N/A
Efficacy: 67.1 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

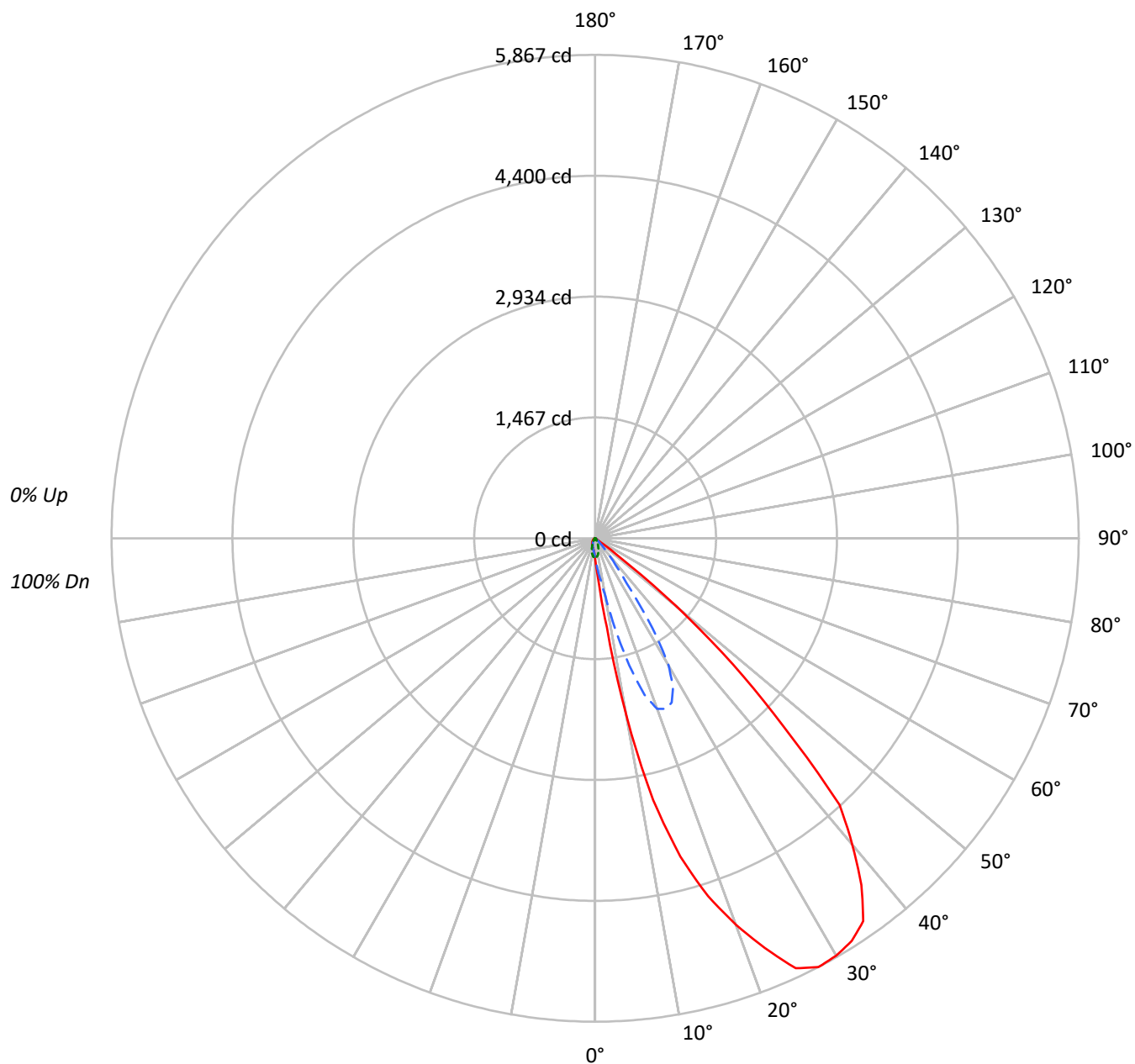
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	23405	23405	23405
5°	54856	22094	15443
10°	216738	19408	12877
15°	401111	15545	11293
20°	514319	11309	10216
25°	615367	8027	9054
30°	654326	5280	7965
35°	670587	3193	6942
40°	613859	2074	5969
45°	442957	1452	4877
50°	193378	1160	4069
55°	13326	980	3412
60°	2422	930	2790
65°	894	894	1994
70°	821	1105	1360
75°	711	1460	1460
80°	0	2176	1618
85°	0	4335	1112



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.2	1.8
10°-20°	276.6	14.2
20°-30°	579.0	29.6
30°-40°	644.5	33.0
40°-50°	370.0	18.9
50°-60°	37.0	1.9
60°-70°	5.8	0.3
70°-80°	3.7	0.2
80°-90°	2.3	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°	890.8	45.6
0°-40°	1535.3	78.6
0°-60°	1942.2	99.4
0°-90°	1954.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1954.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	242	242	242	242	242	
5°	564	389	227	166	159	103
15°	3999	1597	155	109	113	1131
25°	5757	2198	75	66	85	2607
35°	5670	671	27	38	59	3462
45°	3233	81	11	21	36	2469
55°	79	12	6	12	20	236
65°	4	3	4	8	9	5
75°	2	2	4	5	4	1
85°	0	2	4	3	1	0
90°	0	0	0	0	0	



TEST NUMBER: P182830

CATALOG NUMBER: LDSQA4A18827D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6
2.5°	361.0	353.3	345.6	340.7	335.9	342.7	337.9	335.9	322.5	315.7	309.9
5°	564.1	549.6	528.4	511.1	493.8	497.6	484.2	467.8	434.1	410.0	388.9
7.5°	1088.6	1053.0	987.6	924.0	860.5	849.0	806.6	733.5	639.1	567.9	506.3
10°	2203.3	2095.5	1975.1	1845.2	1693.1	1650.8	1545.8	1347.6	1131.0	883.6	704.6
12.5°	3252.4	3203.3	3061.8	2893.4	2728.8	2627.7	2519.0	2191.7	1848.1	1449.6	1116.6
15°	3999.4	3969.5	3845.4	3692.3	3515.2	3449.8	3316.9	2990.6	2556.5	2080.1	1596.9
17.5°	4552.8	4501.8	4371.9	4205.4	3995.5	3939.7	3780.9	3456.5	3006.0	2527.6	1991.5
20°	4988.9	4957.1	4788.7	4588.4	4337.2	4269.8	4084.1	3746.2	3256.3	2748.1	2202.3
22.5°	5380.6	5326.7	5119.8	4881.1	4594.2	4522.0	4315.1	3944.5	3418.0	2852.0	2239.8
25°	5757.0	5675.2	5423.9	5111.1	4774.2	4676.0	4448.9	4056.2	3477.7	2860.7	2197.5
27.5°	5866.7	5825.3	5593.3	5229.5	4839.7	4729.0	4492.2	4081.2	3455.5	2781.7	2045.4
30°	5849.4	5814.7	5621.3	5241.0	4828.1	4711.6	4471.0	4004.2	3326.5	2575.8	1776.9
32.5°	5794.5	5781.0	5547.1	5140.9	4720.3	4593.3	4333.4	3812.6	3085.0	2262.0	1298.5
35°	5670.3	5617.4	5325.8	4943.6	4539.4	4399.8	4106.2	3538.3	2766.3	1646.9	670.9
37.5°	5306.5	5265.1	5035.1	4700.1	4306.4	4127.4	3817.4	3184.1	2141.7	936.6	401.4
40°	4854.1	4833.9	4652.9	4353.6	3933.0	3730.8	3393.9	2605.6	1307.1	532.3	264.7
42.5°	4390.2	4384.4	4190.9	3878.1	3421.8	3189.9	2840.5	1757.6	695.0	321.5	153.0
45°	3233.2	3267.8	3133.1	2945.4	2596.9	2428.5	1975.1	905.8	400.4	178.1	80.9
47.5°	2267.8	2229.2	1990.5	1662.3	1343.7	1137.7	860.5	428.3	213.7	93.4	46.2
50°	1283.1	1289.8	1074.2	869.2	569.8	451.4	342.7	215.6	103.0	49.1	27.9
52.5°	335.0	350.4	302.2	259.9	221.4	180.0	145.3	93.4	49.1	28.9	18.3
55°	78.9	81.8	76.0	71.2	67.4	59.7	52.9	40.4	27.0	18.3	11.6
57.5°	27.9	28.9	27.9	27.9	27.0	26.0	24.1	21.2	16.4	11.6	7.7
60°	12.5	13.5	12.5	13.5	13.5	13.5	13.5	13.5	9.6	6.7	4.8
62.5°	5.8	5.8	5.8	5.8	6.7	6.7	7.7	7.7	5.8	4.8	3.9
65°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	2.9
67.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
70°	2.9	2.9	2.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.9
72.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
75°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
77.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.9	1.9	1.9	1.9
80°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.9	1.9	1.9
82.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.9	1.9	1.9
85°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.9	1.9	1.9
87.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.9	1.9	1.9
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°	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6
2.5°	299.4	298.4	287.8	280.1	276.2	270.5	263.7	254.1	243.5	233.9	230.0
5°	363.8	351.3	329.2	310.9	302.2	293.6	278.2	260.8	244.5	227.2	218.5
7.5°	447.6	411.0	367.7	334.0	319.6	305.1	283.0	258.9	236.8	213.7	201.2
10°	562.1	477.4	402.3	348.4	327.3	308.0	276.2	246.4	222.3	197.3	181.0
12.5°	803.7	593.9	438.9	355.2	327.3	302.2	263.7	229.1	202.1	176.1	160.7
15°	1157.9	801.8	518.8	361.9	320.5	288.8	244.5	206.9	178.1	155.0	140.5
17.5°	1443.8	993.3	618.0	379.2	311.9	270.5	219.5	180.0	153.0	131.9	120.3
20°	1588.2	1074.2	663.2	382.1	290.7	241.6	189.6	152.1	128.0	109.7	100.1
22.5°	1585.3	1048.2	622.8	335.0	255.1	208.9	159.8	125.1	105.9	91.4	83.7
25°	1485.2	927.9	519.8	267.6	206.0	173.3	129.9	101.1	85.7	75.1	68.3
27.5°	1297.5	753.7	387.9	198.3	160.7	136.7	101.1	80.9	68.3	60.6	55.8
30°	1018.4	504.4	244.5	147.3	122.2	103.0	78.0	62.6	53.9	47.2	44.3
32.5°	561.2	262.8	164.6	107.8	89.5	75.1	57.8	45.2	39.5	34.7	33.7
35°	309.9	185.8	117.4	72.2	59.7	51.0	39.5	32.7	28.9	27.0	27.0
37.5°	219.5	119.4	70.3	45.2	38.5	33.7	27.0	23.1	22.1	21.2	21.2
40°	131.9	70.3	42.4	29.8	26.0	23.1	20.2	17.3	17.3	16.4	17.3
42.5°	72.2	42.4	28.9	21.2	18.3	17.3	14.4	13.5	13.5	13.5	14.4
45°	43.3	27.9	20.2	15.4	13.5	11.6	10.6	9.6	10.6	10.6	11.6
47.5°	27.9	20.2	13.5	9.6	8.7	7.7	6.7	7.7	7.7	8.7	9.6
50°	19.3	12.5	8.7	5.8	5.8	4.8	5.8	5.8	6.7	7.7	8.7
52.5°	12.5	8.7	5.8	4.8	3.9	3.9	3.9	4.8	5.8	6.7	7.7
55°	7.7	5.8	4.8	3.9	3.9	3.9	3.9	3.9	4.8	5.8	6.7
57.5°	5.8	4.8	3.9	2.9	2.9	2.9	3.9	3.9	4.8	4.8	5.8
60°	3.9	3.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	4.8	5.8
62.5°	3.9	3.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9	4.8	4.8
65°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9	4.8
67.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	4.8
70°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	4.8
72.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9
75°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9	3.9
77.5°	1.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9	3.9
80°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9	3.9
82.5°	1.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9	3.9
85°	1.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9	3.9
87.5°	1.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.9	3.9	3.9
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°	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6
2.5°	225.2	218.5	212.7	214.6	210.8	204.1	202.1	197.3	191.5	190.6	190.6
5°	208.9	198.3	189.6	188.7	184.8	177.1	175.2	170.4	165.6	164.6	163.6
7.5°	188.7	177.1	169.4	167.5	164.6	157.9	156.9	152.1	149.2	147.3	147.3
10°	168.4	157.9	151.1	150.2	148.2	142.5	141.5	137.6	134.8	133.8	132.8
12.5°	149.2	140.5	134.8	133.8	131.9	127.1	126.1	123.2	121.3	120.3	120.3
15°	130.9	123.2	118.4	117.4	116.5	111.7	111.7	109.7	108.8	108.8	109.7
17.5°	112.6	105.9	102.0	101.1	101.1	97.2	98.2	97.2	97.2	97.2	99.1
20°	94.3	88.6	85.7	86.6	84.7	83.7	84.7	84.7	84.7	86.6	89.5
22.5°	78.9	74.1	71.2	72.2	72.2	71.2	72.2	73.2	75.1	78.0	80.9
25°	64.5	60.6	59.7	60.6	60.6	60.6	62.6	64.5	66.4	69.3	72.2
27.5°	52.0	49.1	49.1	50.1	51.0	51.0	53.9	55.8	58.7	61.6	64.5
30°	41.4	40.4	40.4	42.4	42.4	43.3	47.2	49.1	51.0	53.9	56.8
32.5°	32.7	32.7	33.7	35.6	35.6	37.5	40.4	42.4	44.3	47.2	50.1
35°	27.0	27.9	28.9	29.8	30.8	31.8	34.7	36.6	38.5	41.4	43.3
37.5°	22.1	23.1	24.1	26.0	26.0	27.0	29.8	31.8	32.7	35.6	38.5
40°	18.3	19.3	20.2	22.1	22.1	23.1	26.0	27.0	27.9	30.8	33.7
42.5°	15.4	16.4	17.3	18.3	19.3	20.2	22.1	23.1	25.0	27.0	28.9
45°	12.5	13.5	14.4	15.4	16.4	17.3	18.3	20.2	21.2	23.1	25.0
47.5°	10.6	11.6	12.5	13.5	14.4	14.4	16.4	17.3	18.3	20.2	22.1
50°	9.6	10.6	11.6	11.6	12.5	13.5	14.4	15.4	16.4	17.3	19.3
52.5°	7.7	8.7	9.6	10.6	10.6	11.6	12.5	13.5	14.4	15.4	16.4
55°	7.7	7.7	8.7	9.6	9.6	10.6	11.6	12.5	12.5	13.5	14.4
57.5°	6.7	7.7	7.7	8.7	8.7	9.6	10.6	10.6	11.6	11.6	12.5
60°	5.8	6.7	7.7	7.7	7.7	8.7	8.7	9.6	9.6	10.6	10.6
62.5°	5.8	6.7	6.7	7.7	7.7	7.7	8.7	8.7	8.7	9.6	9.6
65°	5.8	5.8	6.7	6.7	6.7	6.7	7.7	7.7	7.7	8.7	8.7
67.5°	4.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7	6.7	7.7	7.7
70°	4.8	4.8	5.8	5.8	5.8	5.8	5.8	6.7	6.7	6.7	6.7
72.5°	4.8	4.8	4.8	4.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
75°	3.9	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
77.5°	3.9	3.9	3.9	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
80°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
82.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	2.9	2.9
85°	3.9	3.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
87.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	1.9	1.9	1.9
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: P182830

CATALOG NUMBER: LDSQA4A18827D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6
2.5°	186.7	184.8	183.8	186.7	182.9	184.8	183.8	184.8
5°	160.7	158.8	157.9	160.7	156.9	158.8	156.9	158.8
7.5°	144.4	143.4	142.5	144.4	141.5	143.4	142.5	143.4
10°	130.9	129.9	129.0	131.9	129.0	130.9	129.9	130.9
12.5°	119.4	119.4	118.4	120.3	118.4	120.3	119.4	120.3
15°	108.8	109.7	108.8	110.7	109.7	111.7	110.7	112.6
17.5°	100.1	101.1	101.1	104.0	103.0	105.9	104.9	105.9
20°	91.4	92.4	93.4	95.3	95.3	98.2	97.2	99.1
22.5°	82.8	84.7	84.7	87.6	87.6	90.5	90.5	91.4
25°	74.1	77.0	78.0	79.9	80.9	83.7	83.7	84.7
27.5°	67.4	69.3	70.3	73.2	74.1	77.0	77.0	78.9
30°	59.7	62.6	63.5	65.5	66.4	69.3	69.3	71.2
32.5°	52.9	54.9	56.8	58.7	59.7	62.6	62.6	64.5
35°	46.2	49.1	50.1	52.0	53.9	56.8	56.8	58.7
37.5°	40.4	43.3	44.3	46.2	48.1	51.0	51.0	52.9
40°	35.6	38.5	39.5	41.4	42.4	46.2	46.2	47.2
42.5°	31.8	33.7	34.7	36.6	37.5	39.5	39.5	41.4
45°	27.0	28.9	29.8	30.8	32.7	34.7	34.7	35.6
47.5°	23.1	25.0	26.0	27.0	27.9	29.8	29.8	31.8
50°	20.2	21.2	22.1	23.1	24.1	26.0	26.0	27.0
52.5°	17.3	18.3	19.3	20.2	21.2	22.1	23.1	24.1
55°	15.4	16.4	16.4	17.3	18.3	19.3	19.3	20.2
57.5°	13.5	14.4	14.4	14.4	15.4	16.4	16.4	17.3
60°	11.6	12.5	12.5	12.5	13.5	13.5	13.5	14.4
62.5°	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
65°	8.7	8.7	8.7	8.7	8.7	8.7	7.7	8.7
67.5°	7.7	7.7	7.7	6.7	6.7	6.7	6.7	6.7
70°	6.7	6.7	6.7	5.8	5.8	5.8	4.8	4.8
72.5°	5.8	5.8	5.8	4.8	4.8	4.8	3.9	3.9
75°	4.8	4.8	4.8	4.8	3.9	3.9	3.9	3.9
77.5°	3.9	3.9	3.9	3.9	3.9	3.9	2.9	2.9
80°	3.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
82.5°	2.9	2.9	2.9	2.9	1.9	1.9	1.9	1.9
85°	1.9	1.9	1.9	1.9	1.9	1.9	1.0	1.0
87.5°	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)