

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: P182832

Luminaire Tested: **LDSQA4A18835D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182832
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: LDSQA4A18835D010TE LAR35FL 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 35° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2030.0 lumens
Efficiency: N/A
Efficacy: 69.7 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

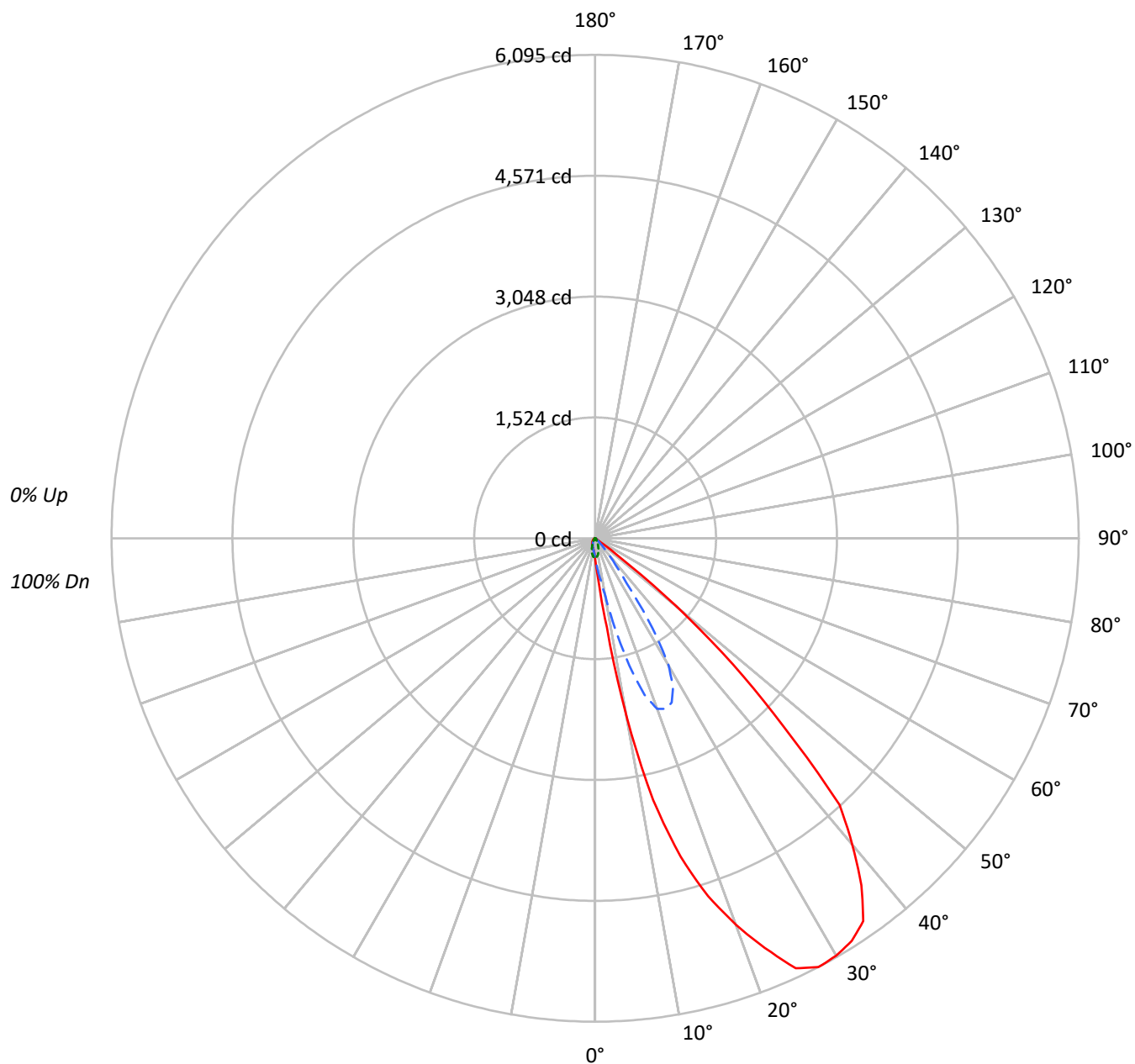
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	24316	24316	24316
5°	56986	22950	16046
10°	225179	20166	13378
15°	416727	16147	11734
20°	534340	11753	10619
25°	639332	8337	9406
30°	679808	5481	8278
35°	696711	3311	7214
40°	637760	2150	6197
45°	460205	1507	5069
50°	200898	1206	4220
55°	13850	1013	3547
60°	2519	969	2906
65°	917	917	2063
70°	850	1133	1416
75°	749	1497	1497
80°	0	2232	1674
85°	0	4446	1112



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.6	1.8
10°-20°	287.3	14.2
20°-30°	601.5	29.6
30°-40°	669.6	33.0
40°-50°	384.4	18.9
50°-60°	38.4	1.9
60°-70°	6.0	0.3
70°-80°	3.8	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°	925.4	45.6
0°-40°	1595.0	78.6
0°-60°	2017.8	99.4
0°-90°	2030.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2030.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	251	251	251	251	251	
5°	586	404	236	172	165	107
15°	4155	1659	161	113	117	1175
25°	5981	2283	78	69	88	2709
35°	5891	697	28	40	61	3597
45°	3359	84	11	22	37	2565
55°	82	12	6	13	21	245
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	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0
2.5°	375.0	367.0	359.0	354.0	349.0	356.0	351.0	349.0	335.0	328.0	322.0
5°	586.0	571.0	549.0	531.0	513.0	517.0	503.0	486.0	451.0	426.0	404.0
7.5°	1131.0	1094.0	1026.0	960.0	894.0	882.0	838.0	762.0	664.0	590.0	526.0
10°	2289.1	2177.1	2052.1	1917.1	1759.0	1715.0	1606.0	1400.0	1175.0	918.0	732.0
12.5°	3379.1	3328.1	3181.1	3006.1	2835.1	2730.1	2617.1	2277.1	1920.1	1506.0	1160.0
15°	4155.1	4124.1	3995.1	3836.1	3652.1	3584.1	3446.1	3107.1	2656.1	2161.1	1659.0
17.5°	4730.1	4677.1	4542.1	4369.1	4151.1	4093.1	3928.1	3591.1	3123.1	2626.1	2069.1
20°	5183.1	5150.1	4975.1	4767.1	4506.1	4436.1	4243.1	3892.1	3383.1	2855.1	2288.1
22.5°	5590.2	5534.2	5319.1	5071.1	4773.1	4698.1	4483.1	4098.1	3551.1	2963.1	2327.1
25°	5981.2	5896.2	5635.2	5310.1	4960.1	4858.1	4622.1	4214.1	3613.1	2972.1	2283.1
27.5°	6095.2	6052.2	5811.2	5433.2	5028.1	4913.1	4667.1	4240.1	3590.1	2890.1	2125.1
30°	6077.2	6041.2	5840.2	5445.2	5016.1	4895.1	4645.1	4160.1	3456.1	2676.1	1846.1
32.5°	6020.2	6006.2	5763.2	5341.1	4904.1	4772.1	4502.1	3961.1	3205.1	2350.1	1349.0
35°	5891.2	5836.2	5533.2	5136.1	4716.1	4571.1	4266.1	3676.1	2874.1	1711.0	697.0
37.5°	5513.2	5470.2	5231.1	4883.1	4474.1	4288.1	3966.1	3308.1	2225.1	973.0	417.0
40°	5043.1	5022.1	4834.1	4523.1	4086.1	3876.1	3526.1	2707.1	1358.0	553.0	275.0
42.5°	4561.1	4555.1	4354.1	4029.1	3555.1	3314.1	2951.1	1826.1	722.0	334.0	159.0
45°	3359.1	3395.1	3255.1	3060.1	2698.1	2523.1	2052.1	941.0	416.0	185.0	84.0
47.5°	2356.1	2316.1	2068.1	1727.0	1396.0	1182.0	894.0	445.0	222.0	97.0	48.0
50°	1333.0	1340.0	1116.0	903.0	592.0	469.0	356.0	224.0	107.0	51.0	29.0
52.5°	348.0	364.0	314.0	270.0	230.0	187.0	151.0	97.0	51.0	30.0	19.0
55°	82.0	85.0	79.0	74.0	70.0	62.0	55.0	42.0	28.0	19.0	12.0
57.5°	29.0	30.0	29.0	29.0	28.0	27.0	25.0	22.0	17.0	12.0	8.0
60°	13.0	14.0	13.0	14.0	14.0	14.0	14.0	14.0	10.0	7.0	5.0
62.5°	6.0	6.0	6.0	6.0	7.0	7.0	8.0	8.0	6.0	5.0	4.0
65°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0
67.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
70°	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0
72.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
75°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
77.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0
80°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
82.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
85°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
87.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
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°	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0
2.5°	311.0	310.0	299.0	291.0	287.0	281.0	274.0	264.0	253.0	243.0	239.0
5°	378.0	365.0	342.0	323.0	314.0	305.0	289.0	271.0	254.0	236.0	227.0
7.5°	465.0	427.0	382.0	347.0	332.0	317.0	294.0	269.0	246.0	222.0	209.0
10°	584.0	496.0	418.0	362.0	340.0	320.0	287.0	256.0	231.0	205.0	188.0
12.5°	835.0	617.0	456.0	369.0	340.0	314.0	274.0	238.0	210.0	183.0	167.0
15°	1203.0	833.0	539.0	376.0	333.0	300.0	254.0	215.0	185.0	161.0	146.0
17.5°	1500.0	1032.0	642.0	394.0	324.0	281.0	228.0	187.0	159.0	137.0	125.0
20°	1650.0	1116.0	689.0	397.0	302.0	251.0	197.0	158.0	133.0	114.0	104.0
22.5°	1647.0	1089.0	647.0	348.0	265.0	217.0	166.0	130.0	110.0	95.0	87.0
25°	1543.0	964.0	540.0	278.0	214.0	180.0	135.0	105.0	89.0	78.0	71.0
27.5°	1348.0	783.0	403.0	206.0	167.0	142.0	105.0	84.0	71.0	63.0	58.0
30°	1058.0	524.0	254.0	153.0	127.0	107.0	81.0	65.0	56.0	49.0	46.0
32.5°	583.0	273.0	171.0	112.0	93.0	78.0	60.0	47.0	41.0	36.0	35.0
35°	322.0	193.0	122.0	75.0	62.0	53.0	41.0	34.0	30.0	28.0	28.0
37.5°	228.0	124.0	73.0	47.0	40.0	35.0	28.0	24.0	23.0	22.0	22.0
40°	137.0	73.0	44.0	31.0	27.0	24.0	21.0	18.0	18.0	17.0	18.0
42.5°	75.0	44.0	30.0	22.0	19.0	18.0	15.0	14.0	14.0	14.0	15.0
45°	45.0	29.0	21.0	16.0	14.0	12.0	11.0	10.0	11.0	11.0	12.0
47.5°	29.0	21.0	14.0	10.0	9.0	8.0	7.0	8.0	8.0	9.0	10.0
50°	20.0	13.0	9.0	6.0	6.0	5.0	6.0	6.0	7.0	8.0	9.0
52.5°	13.0	9.0	6.0	5.0	4.0	4.0	4.0	5.0	6.0	7.0	8.0
55°	8.0	6.0	5.0	4.0	4.0	4.0	4.0	4.0	5.0	6.0	7.0
57.5°	6.0	5.0	4.0	3.0	3.0	3.0	4.0	4.0	5.0	5.0	6.0
60°	4.0	4.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	5.0	6.0
62.5°	4.0	4.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	5.0	5.0
65°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	5.0
67.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	5.0
70°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	5.0
72.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
75°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
77.5°	2.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
80°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
82.5°	2.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
85°	2.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
87.5°	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
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°	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0
2.5°	234.0	227.0	221.0	223.0	219.0	212.0	210.0	205.0	199.0	198.0	198.0
5°	217.0	206.0	197.0	196.0	192.0	184.0	182.0	177.0	172.0	171.0	170.0
7.5°	196.0	184.0	176.0	174.0	171.0	164.0	163.0	158.0	155.0	153.0	153.0
10°	175.0	164.0	157.0	156.0	154.0	148.0	147.0	143.0	140.0	139.0	138.0
12.5°	155.0	146.0	140.0	139.0	137.0	132.0	131.0	128.0	126.0	125.0	125.0
15°	136.0	128.0	123.0	122.0	121.0	116.0	116.0	114.0	113.0	113.0	114.0
17.5°	117.0	110.0	106.0	105.0	105.0	101.0	102.0	101.0	101.0	101.0	103.0
20°	98.0	92.0	89.0	90.0	88.0	87.0	88.0	88.0	88.0	90.0	93.0
22.5°	82.0	77.0	74.0	75.0	75.0	74.0	75.0	76.0	78.0	81.0	84.0
25°	67.0	63.0	62.0	63.0	63.0	63.0	65.0	67.0	69.0	72.0	75.0
27.5°	54.0	51.0	51.0	52.0	53.0	53.0	56.0	58.0	61.0	64.0	67.0
30°	43.0	42.0	42.0	44.0	44.0	45.0	49.0	51.0	53.0	56.0	59.0
32.5°	34.0	34.0	35.0	37.0	37.0	39.0	42.0	44.0	46.0	49.0	52.0
35°	28.0	29.0	30.0	31.0	32.0	33.0	36.0	38.0	40.0	43.0	45.0
37.5°	23.0	24.0	25.0	27.0	27.0	28.0	31.0	33.0	34.0	37.0	40.0
40°	19.0	20.0	21.0	23.0	23.0	24.0	27.0	28.0	29.0	32.0	35.0
42.5°	16.0	17.0	18.0	19.0	20.0	21.0	23.0	24.0	26.0	28.0	30.0
45°	13.0	14.0	15.0	16.0	17.0	18.0	19.0	21.0	22.0	24.0	26.0
47.5°	11.0	12.0	13.0	14.0	15.0	15.0	17.0	18.0	19.0	21.0	23.0
50°	10.0	11.0	12.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	20.0
52.5°	8.0	9.0	10.0	11.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
55°	8.0	8.0	9.0	10.0	10.0	11.0	12.0	13.0	13.0	14.0	15.0
57.5°	7.0	8.0	8.0	9.0	9.0	10.0	11.0	11.0	12.0	12.0	13.0
60°	6.0	7.0	8.0	8.0	8.0	9.0	9.0	10.0	10.0	11.0	11.0
62.5°	6.0	7.0	7.0	8.0	8.0	8.0	9.0	9.0	9.0	10.0	10.0
65°	6.0	6.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0	9.0	9.0
67.5°	5.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0
70°	5.0	5.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0
72.5°	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
75°	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
77.5°	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
80°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
82.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0
85°	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
87.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
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: P182832

CATALOG NUMBER: LDSQA4A18835D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	251.0	251.0	251.0	251.0	251.0	251.0	251.0	251.0
2.5°	194.0	192.0	191.0	194.0	190.0	192.0	191.0	192.0
5°	167.0	165.0	164.0	167.0	163.0	165.0	163.0	165.0
7.5°	150.0	149.0	148.0	150.0	147.0	149.0	148.0	149.0
10°	136.0	135.0	134.0	137.0	134.0	136.0	135.0	136.0
12.5°	124.0	124.0	123.0	125.0	123.0	125.0	124.0	125.0
15°	113.0	114.0	113.0	115.0	114.0	116.0	115.0	117.0
17.5°	104.0	105.0	105.0	108.0	107.0	110.0	109.0	110.0
20°	95.0	96.0	97.0	99.0	99.0	102.0	101.0	103.0
22.5°	86.0	88.0	88.0	91.0	91.0	94.0	94.0	95.0
25°	77.0	80.0	81.0	83.0	84.0	87.0	87.0	88.0
27.5°	70.0	72.0	73.0	76.0	77.0	80.0	80.0	82.0
30°	62.0	65.0	66.0	68.0	69.0	72.0	72.0	74.0
32.5°	55.0	57.0	59.0	61.0	62.0	65.0	65.0	67.0
35°	48.0	51.0	52.0	54.0	56.0	59.0	59.0	61.0
37.5°	42.0	45.0	46.0	48.0	50.0	53.0	53.0	55.0
40°	37.0	40.0	41.0	43.0	44.0	48.0	48.0	49.0
42.5°	33.0	35.0	36.0	38.0	39.0	41.0	41.0	43.0
45°	28.0	30.0	31.0	32.0	34.0	36.0	36.0	37.0
47.5°	24.0	26.0	27.0	28.0	29.0	31.0	31.0	33.0
50°	21.0	22.0	23.0	24.0	25.0	27.0	27.0	28.0
52.5°	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0
55°	16.0	17.0	17.0	18.0	19.0	20.0	20.0	21.0
57.5°	14.0	15.0	15.0	15.0	16.0	17.0	17.0	18.0
60°	12.0	13.0	13.0	13.0	14.0	14.0	14.0	15.0
62.5°	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
65°	9.0	9.0	9.0	9.0	9.0	9.0	8.0	9.0
67.5°	8.0	8.0	8.0	7.0	7.0	7.0	7.0	7.0
70°	7.0	7.0	7.0	6.0	6.0	6.0	5.0	5.0
72.5°	6.0	6.0	6.0	5.0	5.0	5.0	4.0	4.0
75°	5.0	5.0	5.0	5.0	4.0	4.0	4.0	4.0
77.5°	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0
80°	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
82.5°	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0
85°	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0
87.5°	2.0	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)