

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: P182800

Luminaire Tested: **LDSQA4A18835D010TE LAR25NF 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182800
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26803)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA4A18835D010TE LAR25NF 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 25° NARROW FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1992.0 lumens
Efficiency: N/A
Efficacy: 68.4 lumens/watt
Spacing Criteria (0/90/45): 2.36 / 0.61 / 1.19
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

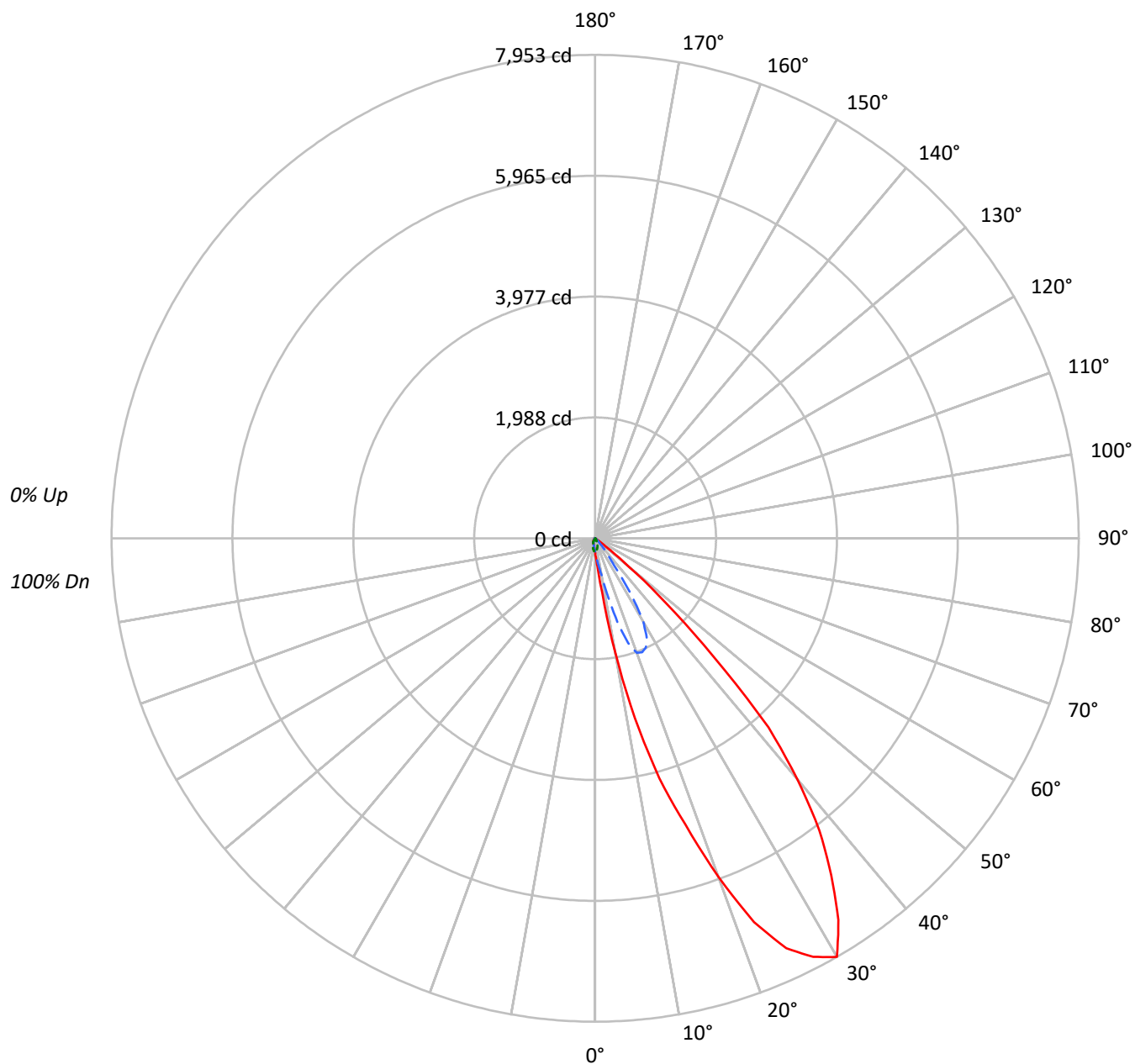
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	113	109	106	104	110	107	105	102	103	101	99		99	98	96		96
2	106	100	95	91	103	98	94	90	95	91	88		92	89	86		89
3	99	91	86	81	97	90	85	80	87	83	79		85	81	78		82
4	93	84	77	72	91	83	76	72	80	75	71		78	74	70		76
5	87	77	70	65	85	76	69	64	74	68	64		72	67	63		70
6	81	70	63	58	79	69	63	58	68	62	57		66	61	57		65
7	76	65	57	52	74	64	57	52	62	56	52		61	56	52		60
8	71	59	52	47	69	59	52	47	58	51	47		57	51	47		55
9	66	55	48	43	65	54	48	43	53	47	43		52	47	43		51
10	62	51	44	39	61	50	44	39	49	43	39		48	43	39		48

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	21506	21506	21506
5°	48146	20227	14490
10°	188801	17707	11411
15°	409857	14342	9929
20°	611432	10619	8969
25°	795274	7482	7803
30°	889662	5034	6824
35°	800641	2957	5795
40°	653403	2023	5058
45°	375168	1370	4110
50°	109733	1055	3466
55°	12667	844	2871
60°	2713	969	2325
65°	917	917	1605
70°	850	1133	1133
75°	749	1497	1123
80°	0	2232	1116
85°	0	4446	1112



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	31.8	1.6
10°-20°	272.7	13.7
20°-30°	650.5	32.7
30°-40°	686.5	34.5
40°-50°	311.3	15.6
50°-60°	27.3	1.4
60°-70°	5.7	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°	955.0	47.9
0°-40°	1641.5	82.4
0°-60°	1980.2	99.4
0°-90°	1992.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1992.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	222	222	222	222	222	
5°	495	363	208	160	149	89
15°	4087	1437	143	98	99	1189
25°	7440	1978	70	60	73	3380
35°	6770	546	25	34	49	4181
45°	2738	77	10	19	30	2171
55°	75	12	5	11	17	150
65°	4	4	4	8	7	5
75°	2	2	4	5	3	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°	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0
2.5°	330.1	332.1	323.0	324.0	315.0	319.0	316.0	308.0	302.0	292.0	288.0
5°	495.1	498.1	478.1	472.1	451.1	451.1	442.1	421.1	402.1	379.1	363.1
7.5°	905.1	917.1	857.1	812.1	746.1	730.1	699.1	627.1	568.1	508.1	463.1
10°	1919.3	1897.3	1773.3	1671.3	1501.2	1438.2	1354.2	1147.2	957.1	768.1	620.1
12.5°	3026.5	3097.5	2858.4	2775.4	2506.4	2449.4	2270.3	1932.3	1611.2	1277.2	981.1
15°	4086.6	4107.6	3898.6	3763.6	3435.5	3361.5	3141.5	2744.4	2312.4	1846.3	1437.2
17.5°	4937.7	5021.8	4714.7	4569.7	4143.6	4024.6	3765.6	3282.5	2801.4	2292.3	1807.3
20°	5930.9	5952.9	5588.8	5309.8	4752.7	4571.7	4261.6	3662.6	3089.5	2508.4	2007.3
22.5°	6834.0	6829.0	6361.0	5966.9	5261.8	5045.8	4662.7	3952.6	3286.5	2604.4	2026.3
25°	7440.1	7456.1	6955.1	6489.0	5623.9	5331.8	4899.7	4103.6	3353.5	2601.4	1978.3
27.5°	7763.2	7747.2	7210.1	6712.0	5756.9	5429.8	4960.8	4108.6	3292.5	2499.4	1834.3
30°	7953.2	7739.2	7166.1	6649.0	5666.9	5330.8	4853.7	3950.6	3089.5	2271.3	1577.2
32.5°	7445.1	7362.1	6863.0	6314.0	5356.8	5023.8	4552.7	3614.5	2767.4	1922.3	1130.2
35°	6770.0	6773.0	6286.0	5772.9	4870.7	4580.7	4094.6	3205.5	2374.4	1336.2	546.1
37.5°	6061.9	6071.9	5608.9	5131.8	4328.7	4023.6	3568.5	2739.4	1708.3	680.1	329.0
40°	5166.8	5187.8	4788.7	4405.7	3664.6	3370.5	2964.4	2073.3	955.1	380.1	223.0
42.5°	4221.6	4247.6	3893.6	3553.5	2923.4	2681.4	2321.4	1284.2	474.1	246.0	131.0
45°	2738.4	2813.4	2550.4	2407.4	2042.3	1898.3	1515.2	655.1	286.0	144.0	77.0
47.5°	1567.2	1568.2	1346.2	1078.2	884.1	769.1	601.1	298.0	167.0	81.0	47.0
50°	728.1	746.1	591.1	492.1	352.1	298.0	245.0	161.0	88.0	47.0	29.0
52.5°	212.0	224.0	203.0	184.0	156.0	139.0	119.0	79.0	46.0	28.0	18.0
55°	75.0	80.0	75.0	70.0	63.0	57.0	51.0	38.0	26.0	17.0	12.0
57.5°	31.0	32.0	31.0	30.0	28.0	28.0	25.0	21.0	16.0	11.0	8.0
60°	14.0	15.0	14.0	15.0	14.0	14.0	14.0	15.0	10.0	7.0	6.0
62.5°	6.0	7.0	7.0	7.0	7.0	8.0	8.0	7.0	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	4.0
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	3.0	3.0	3.0	2.0	2.0	3.0	3.0	3.0
72.5°	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0
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	1.0	2.0	2.0	2.0
80°	0.0	0.0	0.0	0.0	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°	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0
2.5°	283.0	274.0	260.0	251.0	247.0	241.0	237.0	227.0	223.0	215.0	212.0
5°	348.1	330.1	309.0	292.0	281.0	269.0	251.0	231.0	221.0	208.0	201.0
7.5°	422.1	383.1	346.1	316.0	302.0	286.0	263.0	232.0	213.0	196.0	186.0
10°	516.1	436.1	378.1	330.1	309.0	288.0	260.0	224.0	200.0	180.0	169.0
12.5°	736.1	526.1	407.1	338.1	311.0	285.0	250.0	213.0	185.0	162.0	150.0
15°	1059.2	735.1	485.1	345.1	304.0	272.0	232.0	195.0	166.0	143.0	131.0
17.5°	1345.2	937.1	593.1	371.1	302.0	257.0	210.0	172.0	144.0	122.0	112.0
20°	1501.2	1043.2	665.1	387.1	293.0	234.0	185.0	149.0	122.0	103.0	94.0
22.5°	1504.2	1037.2	639.1	352.1	258.0	203.0	160.0	126.0	102.0	85.0	78.0
25°	1414.2	925.1	533.1	277.0	211.0	172.0	134.0	105.0	83.0	70.0	64.0
27.5°	1246.2	752.1	392.1	200.0	165.0	139.0	108.0	84.0	65.0	57.0	52.0
30°	980.1	490.1	229.0	149.0	128.0	107.0	82.0	59.0	51.0	45.0	41.0
32.5°	526.1	238.0	160.0	110.0	91.0	75.0	54.0	43.0	37.0	33.0	32.0
35°	275.0	174.0	107.0	70.0	58.0	49.0	37.0	30.0	27.0	25.0	25.0
37.5°	197.0	109.0	68.0	45.0	38.0	31.0	26.0	22.0	20.0	20.0	20.0
40°	117.0	67.0	41.0	29.0	25.0	22.0	19.0	16.0	16.0	16.0	16.0
42.5°	71.0	42.0	29.0	20.0	18.0	16.0	14.0	13.0	12.0	12.0	13.0
45°	44.0	29.0	19.0	15.0	14.0	12.0	11.0	10.0	10.0	10.0	11.0
47.5°	28.0	21.0	14.0	10.0	9.0	8.0	7.0	7.0	8.0	8.0	9.0
50°	21.0	13.0	9.0	7.0	6.0	6.0	5.0	6.0	6.0	7.0	8.0
52.5°	12.0	8.0	6.0	5.0	5.0	4.0	4.0	5.0	5.0	6.0	7.0
55°	8.0	6.0	5.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	6.0
57.5°	6.0	5.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	5.0	6.0
60°	5.0	4.0	4.0	4.0	4.0	3.0	3.0	4.0	4.0	5.0	5.0
62.5°	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	5.0
65°	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.0
67.5°	3.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	5.0
70°	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
72.5°	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
75°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
77.5°	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
80°	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0
82.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
85°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0
87.5°	3.0	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°	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0
2.5°	204.0	201.0	195.0	194.0	193.0	189.0	186.0	183.0	183.0	180.0	178.0
5°	189.0	184.0	177.0	174.0	173.0	168.0	164.0	161.0	160.0	157.0	154.0
7.5°	173.0	167.0	159.0	156.0	155.0	150.0	146.0	143.0	141.0	138.0	136.0
10°	156.0	149.0	142.0	139.0	138.0	133.0	130.0	127.0	125.0	123.0	121.0
12.5°	138.0	132.0	125.0	122.0	121.0	117.0	114.0	112.0	111.0	109.0	108.0
15°	120.0	114.0	108.0	106.0	105.0	102.0	100.0	99.0	98.0	98.0	97.0
17.5°	102.0	97.0	92.0	91.0	90.0	88.0	87.0	86.0	87.0	87.0	88.0
20°	85.0	81.0	77.0	77.0	76.0	75.0	75.0	75.0	77.0	78.0	80.0
22.5°	70.0	67.0	64.0	64.0	64.0	64.0	64.0	66.0	68.0	70.0	71.0
25°	58.0	55.0	54.0	54.0	54.0	55.0	56.0	58.0	60.0	62.0	64.0
27.5°	47.0	45.0	45.0	45.0	46.0	47.0	48.0	50.0	53.0	55.0	57.0
30°	38.0	37.0	37.0	38.0	39.0	40.0	42.0	44.0	46.0	48.0	50.0
32.5°	30.0	31.0	31.0	32.0	33.0	34.0	36.0	38.0	40.0	42.0	43.0
35°	25.0	25.0	26.0	27.0	28.0	29.0	31.0	33.0	34.0	36.0	38.0
37.5°	20.0	21.0	22.0	23.0	24.0	25.0	26.0	28.0	29.0	31.0	33.0
40°	17.0	18.0	19.0	20.0	20.0	22.0	22.0	24.0	25.0	27.0	29.0
42.5°	14.0	15.0	16.0	17.0	17.0	18.0	19.0	20.0	22.0	23.0	25.0
45°	11.0	12.0	13.0	14.0	15.0	16.0	16.0	18.0	19.0	20.0	22.0
47.5°	10.0	11.0	12.0	12.0	13.0	14.0	14.0	16.0	17.0	18.0	19.0
50°	8.0	9.0	10.0	11.0	11.0	12.0	13.0	14.0	15.0	16.0	16.0
52.5°	7.0	8.0	9.0	9.0	10.0	11.0	11.0	12.0	13.0	13.0	14.0
55°	7.0	8.0	8.0	9.0	9.0	10.0	10.0	11.0	11.0	12.0	12.0
57.5°	6.0	7.0	7.0	8.0	8.0	9.0	9.0	10.0	10.0	10.0	11.0
60°	6.0	6.0	7.0	7.0	8.0	8.0	8.0	9.0	9.0	9.0	10.0
62.5°	5.0	6.0	6.0	7.0	7.0	7.0	8.0	8.0	8.0	9.0	9.0
65°	5.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0	8.0	8.0	8.0
67.5°	5.0	5.0	6.0	6.0	6.0	6.0	7.0	7.0	7.0	7.0	7.0
70°	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
72.5°	4.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0	6.0	5.0
75°	4.0	4.0	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	4.0	4.0
80°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0
82.5°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0
85°	4.0	3.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	2.0
87.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	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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CATALOG NUMBER: LDSQA4A18835D010TE LAR25NF 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	222.0	222.0	222.0	222.0	222.0	222.0	222.0	222.0
2.5°	176.0	174.0	175.0	175.0	173.0	172.0	172.0	173.0
5°	152.0	150.0	151.0	151.0	149.0	148.0	148.0	149.0
7.5°	134.0	132.0	133.0	133.0	131.0	131.0	131.0	131.0
10°	120.0	119.0	119.0	119.0	117.0	118.0	117.0	116.0
12.5°	107.0	107.0	107.0	107.0	106.0	107.0	106.0	106.0
15°	97.0	97.0	98.0	98.0	98.0	99.0	99.0	99.0
17.5°	89.0	90.0	91.0	92.0	92.0	93.0	93.0	93.0
20°	81.0	83.0	84.0	85.0	85.0	87.0	86.0	87.0
22.5°	73.0	75.0	76.0	77.0	78.0	79.0	79.0	80.0
25°	66.0	68.0	69.0	70.0	71.0	73.0	73.0	73.0
27.5°	59.0	61.0	62.0	64.0	65.0	67.0	67.0	67.0
30°	52.0	54.0	55.0	56.0	58.0	60.0	60.0	61.0
32.5°	45.0	48.0	49.0	50.0	52.0	54.0	55.0	55.0
35°	40.0	42.0	43.0	45.0	46.0	49.0	49.0	49.0
37.5°	35.0	37.0	39.0	40.0	41.0	43.0	44.0	45.0
40°	31.0	33.0	34.0	35.0	37.0	39.0	40.0	40.0
42.5°	27.0	29.0	30.0	31.0	32.0	34.0	34.0	34.0
45°	24.0	25.0	26.0	27.0	28.0	29.0	30.0	30.0
47.5°	20.0	22.0	22.0	23.0	24.0	26.0	26.0	27.0
50°	17.0	19.0	19.0	20.0	21.0	22.0	23.0	23.0
52.5°	15.0	16.0	17.0	17.0	18.0	19.0	20.0	20.0
55°	13.0	14.0	14.0	15.0	15.0	16.0	17.0	17.0
57.5°	11.0	12.0	13.0	13.0	13.0	14.0	14.0	15.0
60°	10.0	11.0	11.0	11.0	11.0	12.0	12.0	12.0
62.5°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
65°	8.0	8.0	8.0	8.0	7.0	7.0	7.0	7.0
67.5°	7.0	7.0	7.0	7.0	6.0	6.0	6.0	6.0
70°	6.0	6.0	6.0	6.0	5.0	5.0	5.0	4.0
72.5°	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0
75°	5.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0
77.5°	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0
80°	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0
82.5°	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	2.0	2.0	2.0	2.0	1.0	1.0	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)