

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: P170845

Luminaire Tested: **LDA4A09827D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170845
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26102)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A09827D010TE LAR25NF 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,
at 30° tilt
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 734.6 lumens
Efficiency: N/A
Efficacy: 53.1 lumens/watt
Spacing Criteria (0/90/45): 2.11 / 1.09 / 1.54
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

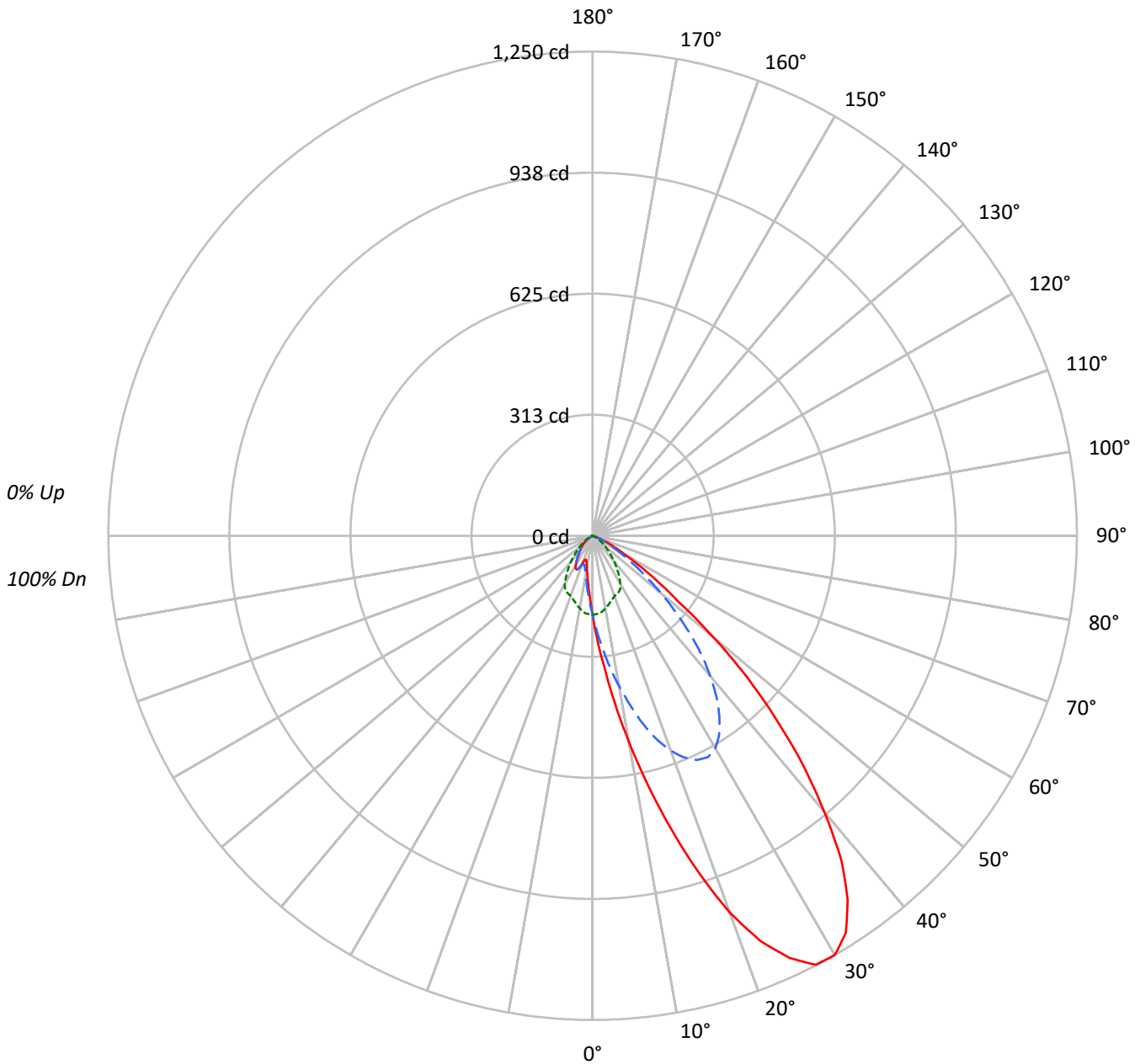
Input Watts (W): 13.84
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90								
2	104	98	93	88	102	96	91	87	93	89	85	90	86	84	87	84	82	80								
3	97	89	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71								
4	90	80	73	67	88	79	72	67	77	71	66	74	69	65	72	68	65	63								
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56								
6	78	66	58	53	76	65	58	53	64	57	52	62	56	52	61	55	52	50								
7	72	60	53	47	71	60	52	47	58	52	47	57	51	47	56	50	46	45								
8	67	55	48	43	66	55	47	42	53	47	42	52	46	42	51	46	42	40								
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36								
10	59	47	40	35	58	46	39	35	45	39	35	45	39	34	44	38	34	33								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	25113	25113	25113
5°	41788	24924	15688
10°	67659	23835	10596
15°	100050	22590	8236
20°	135908	21711	9726
25°	163629	21789	13201
30°	178048	20424	12320
35°	172833	17211	9863
40°	149713	13847	8083
45°	116751	10676	6925
50°	77428	7983	5315
55°	43181	5849	3183
60°	22770	3898	1307
65°	12287	1955	146
70°	5878	685	180
75°	2049	477	238
80°	710	710	0
85°	1981	1415	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	21.7	3.0
10°-20°	85.7	11.7
20°-30°	176.3	24.0
30°-40°	210.6	28.7
40°-50°	155.5	21.2
50°-60°	65.5	8.9
60°-70°	16.1	2.2
70°-80°	2.2	0.3
80°-90°	0.9	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°	283.8	38.6
0°-40°	494.4	67.3
0°-60°	715.4	97.4
0°-90°	734.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	734.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	204	204	204	204	204	
5°	338	291	201	144	127	39
15°	784	503	177	80	64	230
25°	1202	639	160	97	97	550
35°	1148	571	114	68	66	704
45°	669	352	61	40	40	514
55°	201	130	27	17	15	192
65°	42	29	7	1	0	46
75°	4	2	1	0	0	6
85°	1	1	1	0	0	1
90°	0	0	0	0	0	



TEST NUMBER: P170845

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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	203.6	203.6	203.6	203.6	203.6	203.6	203.6	203.6	203.6	203.6	203.6
2.5°	264.8	261.5	261.5	262.4	265.3	262.9	261.0	259.1	261.0	256.7	258.1
5°	337.5	337.0	337.0	333.2	336.5	337.0	333.2	329.8	330.8	324.6	324.6
7.5°	433.1	430.2	429.3	424.0	427.8	427.4	421.2	415.4	415.4	405.4	403.0
10°	540.2	536.4	534.5	527.8	531.1	529.2	520.1	511.5	509.1	494.8	489.5
12.5°	658.3	655.9	653.0	644.4	647.3	643.4	630.5	618.1	612.9	593.7	584.6
15°	783.5	787.3	782.6	772.5	774.4	767.7	751.0	733.8	725.7	699.9	686.5
17.5°	912.6	917.4	912.1	900.6	900.2	891.1	868.1	847.1	835.1	802.2	784.5
20°	1035.4	1036.9	1030.2	1017.8	1014.9	1002.5	974.7	945.1	933.6	893.0	870.5
22.5°	1132.0	1137.3	1129.1	1120.1	1111.0	1095.2	1062.7	1030.2	1013.9	967.6	940.3
25°	1202.3	1214.2	1204.7	1194.2	1184.1	1165.5	1129.1	1094.2	1074.2	1022.5	991.5
27.5°	1248.6	1260.1	1249.6	1237.7	1227.1	1205.6	1165.9	1132.5	1108.1	1051.7	1018.2
30°	1250.1	1263.9	1253.0	1240.0	1230.0	1208.5	1167.9	1133.4	1106.2	1049.8	1014.9
32.5°	1215.7	1226.7	1215.7	1204.7	1193.2	1172.6	1132.0	1099.0	1070.3	1016.3	981.4
35°	1147.8	1157.3	1146.3	1133.4	1125.3	1107.1	1068.4	1036.9	1008.2	958.5	927.9
37.5°	1054.1	1062.7	1052.7	1045.5	1033.5	1017.3	981.9	953.7	926.4	881.5	854.3
40°	929.8	948.0	938.4	933.6	922.6	908.8	877.7	852.8	828.0	788.8	766.3
42.5°	805.5	822.7	814.1	810.8	801.2	789.2	763.4	742.4	719.5	686.9	667.8
45°	669.3	687.4	679.3	677.9	669.7	660.7	632.9	621.9	601.9	571.3	562.2
47.5°	541.1	544.5	536.8	537.3	531.6	525.4	502.9	496.2	486.2	462.7	452.2
50°	403.5	405.9	399.6	401.6	397.7	393.9	378.6	375.3	369.0	353.3	347.1
52.5°	277.7	288.7	284.4	286.3	284.4	283.0	276.8	271.1	268.2	258.1	255.3
55°	200.8	201.7	198.4	200.3	198.9	198.4	194.6	191.2	189.8	183.6	182.6
57.5°	139.1	140.1	140.1	139.1	138.6	137.7	135.3	133.4	132.4	131.0	128.1
60°	92.3	96.1	94.7	95.6	95.1	95.1	93.2	91.8	91.3	88.4	88.4
62.5°	63.1	65.5	64.5	65.0	64.5	64.5	63.1	62.1	62.1	61.7	60.2
65°	42.1	43.5	42.5	43.0	43.0	43.0	42.1	41.1	41.1	40.6	39.7
67.5°	26.8	27.7	27.2	27.7	27.2	27.7	26.8	26.3	25.8	25.8	25.3
70°	16.3	16.7	16.3	16.7	16.3	16.3	15.8	15.8	15.3	14.8	14.8
72.5°	8.6	9.1	9.1	9.1	9.1	9.1	8.6	8.1	8.1	8.1	7.6
75°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	3.8	3.8	3.8
77.5°	1.9	1.9	1.9	1.9	2.4	1.9	1.9	1.9	1.9	1.9	1.9
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9	1.9	1.4
87.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.4	2.4	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):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	52.5°
0°	203.6	203.6	203.6	203.6	203.6	203.6	203.6	203.6	203.6	203.6	203.6
2.5°	254.3	251.9	251.0	249.1	246.7	245.2	243.8	244.3	240.9	238.5	235.2
5°	318.4	313.1	310.3	305.9	300.7	296.4	292.6	290.7	284.4	280.1	271.1
7.5°	393.9	384.8	379.1	371.4	362.4	354.7	347.1	341.8	332.2	324.1	310.3
10°	476.6	462.7	452.7	441.2	427.4	414.9	403.5	393.9	379.6	367.1	349.0
12.5°	567.0	547.4	533.0	516.3	496.7	479.5	458.9	447.9	428.3	411.1	387.7
15°	663.0	637.2	617.2	594.2	568.4	545.4	519.2	502.9	477.1	455.1	425.9
17.5°	755.3	722.8	696.5	667.3	635.3	605.7	574.6	551.7	520.1	492.9	458.0
20°	835.6	796.9	764.9	729.5	691.7	655.4	621.5	590.9	554.1	522.0	482.3
22.5°	901.1	856.2	819.4	778.3	734.8	693.6	654.9	620.0	578.0	542.6	499.1
25°	948.4	899.2	858.1	812.7	764.9	718.0	676.9	638.7	592.8	555.0	508.6
27.5°	973.3	921.2	877.7	828.9	778.3	729.5	685.0	644.4	596.1	556.4	508.6
30°	969.0	915.9	871.0	820.8	769.6	720.9	674.5	633.9	584.2	544.0	496.2
32.5°	936.0	883.9	839.9	791.2	741.0	693.6	647.3	608.1	558.4	519.2	472.8
35°	881.5	832.3	790.7	744.3	697.0	652.5	610.5	570.8	523.0	485.7	442.2
37.5°	810.8	765.8	728.1	685.0	641.5	601.4	559.8	525.8	483.3	448.4	405.9
40°	726.1	686.5	653.0	614.8	575.6	540.7	505.8	472.8	431.2	400.1	363.8
42.5°	632.9	599.0	570.3	536.8	502.9	473.3	443.1	414.5	380.0	351.8	317.9
45°	532.5	503.9	480.4	453.7	425.5	397.7	375.7	351.8	319.8	298.8	270.1
47.5°	428.8	406.8	389.1	368.6	346.1	328.9	307.9	288.7	265.3	245.7	222.3
50°	330.3	315.0	302.6	288.3	272.0	256.2	243.8	229.0	211.3	195.5	176.9
52.5°	244.3	234.2	226.6	217.0	206.0	197.9	186.4	175.4	162.1	150.1	135.8
55°	175.0	169.2	164.4	158.7	151.1	143.9	138.2	130.5	120.9	111.9	101.3
57.5°	125.7	119.5	119.0	112.8	109.9	104.7	99.4	93.7	87.0	80.8	73.1
60°	87.0	82.7	80.8	78.4	75.1	71.7	69.3	65.5	60.7	56.4	50.7
62.5°	58.8	55.9	55.0	54.0	51.2	49.7	46.8	44.5	41.1	37.8	33.9
65°	38.7	36.8	35.9	34.4	33.0	32.0	30.6	28.7	25.8	23.9	21.5
67.5°	24.4	22.9	22.0	21.5	20.1	19.6	18.2	17.2	15.3	14.3	12.9
70°	13.9	13.4	12.4	12.4	11.5	10.5	10.0	9.1	8.6	7.6	7.2
72.5°	7.2	7.2	6.7	6.2	5.7	5.7	5.3	4.8	4.3	3.8	3.8
75°	3.3	3.3	3.3	2.9	2.9	2.9	2.4	2.4	2.4	1.9	1.9
77.5°	1.9	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
85°	1.4	1.0	1.0	1.0	1.0	1.4	1.4	1.4	1.4	1.4	1.4
87.5°	1.4	1.4	1.9	1.9	1.9	1.9	1.9	1.9	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



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CANDELA DISTRIBUTION (continued):

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	203.6	203.6	203.6	203.6	203.6	203.6	203.6	203.6	203.6	203.6	203.6
2.5°	232.8	231.9	229.5	229.0	223.7	222.8	219.9	215.6	212.3	211.3	212.3
5°	267.7	263.4	256.2	254.8	246.2	243.3	237.1	230.4	224.7	221.3	219.9
7.5°	303.6	296.4	285.9	280.6	268.2	262.0	252.9	243.3	234.2	228.0	224.2
10°	338.0	326.5	307.4	303.1	287.8	277.7	265.3	252.4	240.9	232.3	226.1
12.5°	370.5	356.6	337.0	325.1	305.0	292.1	276.3	260.5	246.2	234.7	226.1
15°	403.9	385.8	361.4	344.7	321.7	304.5	285.4	267.2	250.5	236.2	225.6
17.5°	431.7	409.2	380.5	360.4	333.7	313.1	291.1	270.1	251.9	235.7	223.7
20°	452.2	425.9	393.4	370.0	340.4	317.4	293.5	270.6	250.5	232.8	219.9
22.5°	466.1	436.0	400.6	374.8	343.7	318.9	293.0	269.1	248.6	230.4	216.6
25°	472.8	440.3	403.5	375.7	343.2	317.4	290.7	266.3	245.2	226.6	213.2
27.5°	471.8	437.4	399.6	370.5	337.5	310.7	283.5	259.1	238.5	219.9	206.0
30°	458.0	424.0	385.8	356.1	323.6	296.9	269.6	245.7	225.6	206.5	193.6
32.5°	436.5	401.6	364.3	331.3	303.6	277.3	251.5	227.1	207.9	189.3	176.9
35°	407.3	373.8	338.0	309.8	279.7	254.3	229.5	206.5	188.3	170.2	158.7
37.5°	373.4	341.3	308.3	279.2	252.9	229.5	206.0	185.5	167.3	151.1	140.1
40°	334.2	304.5	274.4	249.5	223.7	202.2	180.7	160.6	145.8	131.0	121.4
42.5°	291.6	265.3	238.1	216.6	193.1	174.0	153.5	139.1	124.8	111.4	103.7
45°	247.1	224.2	201.3	181.7	162.5	145.8	128.1	114.7	103.7	92.7	86.0
47.5°	203.2	183.6	164.9	149.1	132.4	118.6	106.1	94.2	83.7	74.6	69.3
50°	158.7	145.8	131.0	118.1	104.7	93.2	81.7	73.1	65.0	58.3	55.0
52.5°	123.8	111.9	99.9	89.4	79.8	70.3	62.6	55.5	49.7	45.4	43.0
55°	92.3	82.7	73.6	65.5	57.8	51.6	46.4	42.1	38.2	34.9	33.9
57.5°	66.0	58.8	52.6	46.4	41.6	37.8	34.4	31.6	29.2	26.8	26.3
60°	45.9	40.6	36.8	33.0	30.1	27.2	25.3	23.4	21.5	20.1	19.6
62.5°	30.6	27.7	24.9	22.9	21.5	19.1	18.2	16.7	15.8	14.3	13.9
65°	19.6	17.7	16.3	14.8	13.9	12.9	12.0	11.0	10.0	9.1	9.1
67.5°	12.0	10.5	10.0	9.1	8.1	7.6	7.2	6.2	5.7	5.7	5.3
70°	6.7	5.7	5.3	4.8	4.3	4.3	3.8	3.3	3.3	2.9	2.9
72.5°	3.3	3.3	2.9	2.9	2.4	2.4	1.9	1.9	1.9	1.4	1.4
75°	1.9	1.9	1.4	1.4	1.4	1.4	1.4	1.4	1.0	1.0	1.0
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	1.4	1.4	1.4	1.4	1.0	1.0	1.0	1.0	1.0	1.0	1.0
87.5°	1.4	1.4	1.4	1.4	1.4	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	0.0	0.0	0.0



TEST NUMBER: P170845

CATALOG NUMBER: LDA4A09827D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	203.6	203.6	203.6	203.6	203.6	203.6	203.6	203.6
2.5°	208.4	203.6	202.7	202.7	182.6	170.7	161.6	159.2
5°	213.2	206.5	203.2	201.3	165.4	144.4	130.5	126.7
7.5°	215.6	206.0	200.8	196.5	148.7	121.4	106.6	102.3
10°	214.6	203.2	196.0	190.3	133.4	103.7	88.4	84.6
12.5°	212.7	199.8	190.7	183.6	120.5	89.9	76.0	72.2
15°	210.8	196.0	185.5	176.9	109.9	80.3	67.9	64.5
17.5°	207.0	191.7	179.7	170.7	103.3	76.5	66.0	64.1
20°	202.7	186.9	174.5	165.4	101.3	80.3	74.1	74.1
22.5°	199.8	183.6	171.6	162.5	104.7	89.4	87.0	88.4
25°	196.0	180.7	168.7	160.1	108.0	96.6	95.1	97.0
27.5°	189.8	174.5	163.0	154.4	106.1	95.6	94.2	95.1
30°	177.4	162.5	152.5	143.4	98.5	88.4	86.0	86.5
32.5°	161.6	147.2	137.7	129.1	87.5	77.9	75.5	75.5
35°	144.4	131.0	121.9	114.3	77.0	68.4	66.0	65.5
37.5°	127.2	114.7	107.1	99.9	67.4	59.8	57.4	56.9
40°	109.9	99.0	91.8	86.0	59.3	53.1	50.7	50.2
42.5°	93.7	84.1	77.9	73.1	51.6	46.8	44.9	44.5
45°	77.4	69.8	65.0	61.2	44.9	40.2	39.7	39.7
47.5°	62.6	56.4	53.1	50.7	38.2	34.4	33.9	34.4
50°	50.2	45.9	43.5	41.6	32.5	29.2	27.7	27.7
52.5°	39.7	36.8	35.4	33.9	26.8	23.4	21.5	21.0
55°	31.6	29.2	28.2	27.2	21.0	17.2	15.3	14.8
57.5°	24.9	22.9	22.0	21.0	15.8	12.0	10.0	9.6
60°	18.6	17.2	16.3	15.8	11.0	7.2	5.7	5.3
62.5°	13.4	12.4	11.5	11.0	6.7	3.8	2.4	1.9
65°	8.1	8.1	7.2	6.7	3.3	1.4	1.0	0.5
67.5°	4.8	4.3	3.8	3.8	1.4	1.0	0.5	0.5
70°	2.4	2.4	1.9	1.9	1.0	0.5	0.5	0.5
72.5°	1.4	1.4	1.4	1.0	1.0	0.5	0.5	0.5
75°	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5
77.5°	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.0
80°	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.0
82.5°	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5
85°	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.0
87.5°	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5
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)