

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P331642-930

Luminaire Tested: **SA2XXRDIP-C290D1080U930-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331642-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C290D1080U930-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4354.8 lumens
Efficiency: N/A
Efficacy: 103.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Indirect

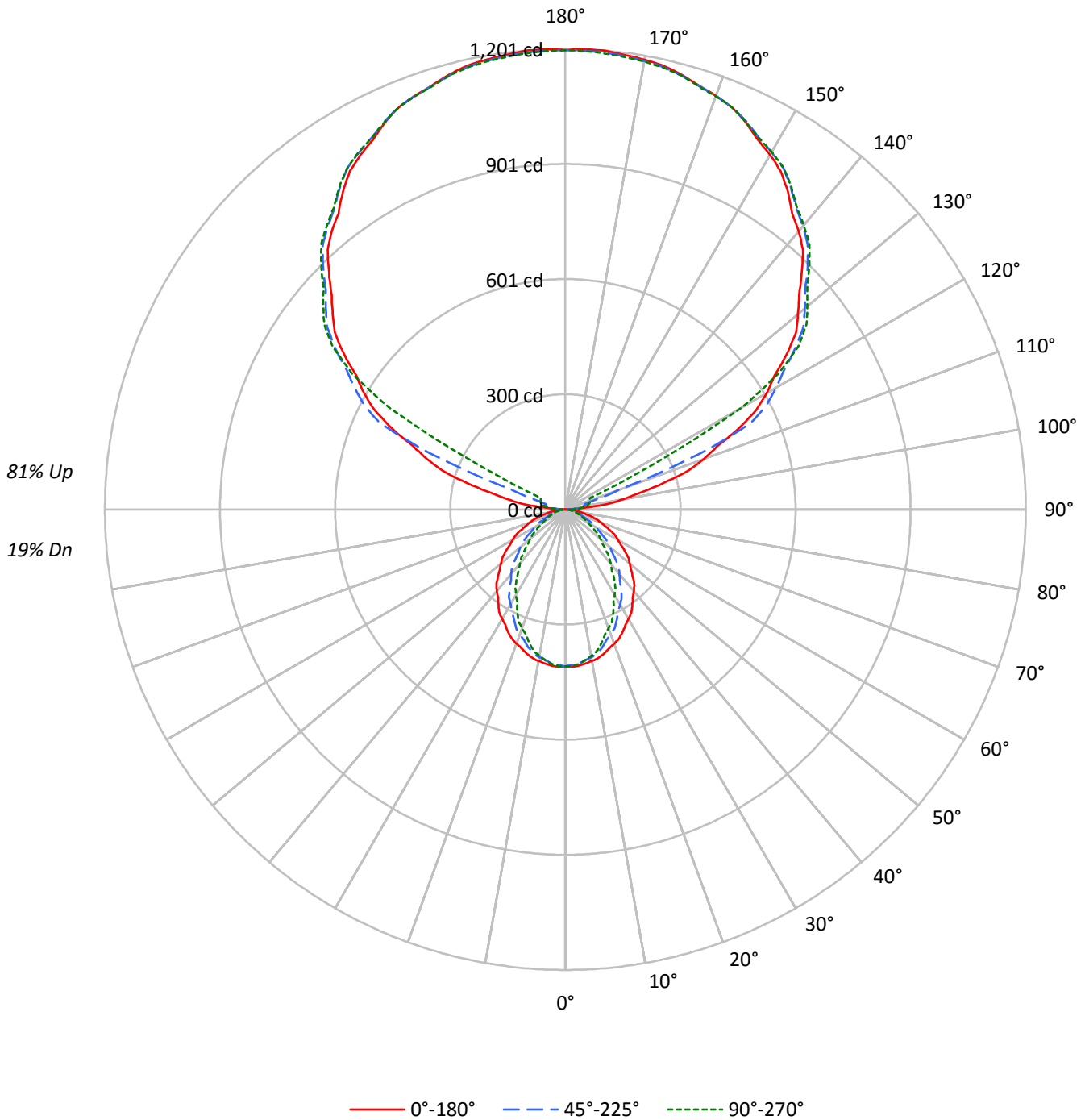
Input Watts (W): 42.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	100	100	100	100	88	88	88	88	66	66	66	46	46	46	28	28	28	19
1	91	87	83	80	80	77	74	71	58	56	54	41	40	39	25	24	24	17
2	83	76	70	66	73	67	63	59	51	48	45	36	34	33	22	21	20	14
3	76	67	60	55	67	59	54	49	45	41	38	32	30	28	20	19	18	12
4	69	59	52	46	61	53	46	42	40	36	33	29	26	24	18	16	15	11
5	64	53	45	39	56	47	40	36	36	31	28	26	23	21	16	15	13	9
6	58	47	40	34	51	42	36	31	32	28	24	23	20	18	15	13	12	8
7	54	42	35	30	47	38	31	27	29	25	21	21	18	16	13	12	10	7
8	50	38	31	26	44	34	28	24	26	22	19	19	16	14	12	11	9	7
9	46	35	28	23	41	31	25	21	24	20	17	18	15	13	11	10	9	6
10	43	32	25	21	38	28	23	19	22	18	15	16	13	11	10	9	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6608	6608	6608
5°	6634	6525	6561
10°	6583	6419	6365
15°	6506	6228	6048
20°	6402	5957	5658
25°	6296	5649	5279
30°	6145	5330	4793
35°	6000	4987	4366
40°	5855	4628	3872
45°	5683	4229	3425
50°	5506	3823	2987
55°	5326	3386	2567
60°	5118	2929	2131
65°	4883	2460	1937
70°	4598	2030	1780
75°	4255	1847	1666
80°	3756	1655	1516
85°	2946	1297	1297



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.3	0.9
10°-20°	105.2	2.4
20°-30°	147.7	3.4
30°-40°	161.1	3.7
40°-50°	148.1	3.4
50°-60°	116.3	2.7
60°-70°	75.8	1.7
70°-80°	39.1	0.9
80°-90°	13.1	0.3
90°-100°	40.0	0.9
100°-110°	146.5	3.4
110°-120°	391.7	9.0
120°-130°	646.5	14.8
130°-140°	687.6	15.8
140°-150°	639.1	14.7
150°-160°	513.8	11.8
160°-170°	331.1	7.6
170°-180°	114.0	2.6
0°-30°	291.2	6.7
0°-40°	452.3	10.4
0°-60°	716.7	16.5
0°-90°	844.7	19.4
90°-120°	578.1	13.3
90°-150°	2551.3	58.6
90°-180°	3510.0	80.6
0°-180°	4354.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	409	409	409	409	409	
5°	409	407	403	406	405	39
15°	389	385	373	366	362	110
25°	353	341	317	302	296	162
35°	304	285	253	230	222	190
45°	249	223	185	160	150	192
55°	189	160	120	99	91	169
65°	128	98	64	52	51	127
75°	68	43	30	27	27	72
85°	16	8	7	7	7	19
90°	1	10	17	22	23	3
95°	56	30	34	38	37	69
105°	264	275	53	62	66	282
115°	498	513	535	152	71	491
125°	705	716	732	738	741	628
135°	872	885	894	902	900	673
145°	1012	1011	1025	1031	1027	632
155°	1114	1107	1116	1121	1115	513
165°	1174	1169	1171	1176	1171	331
175°	1200	1195	1196	1201	1193	114
180°	1198	1198	1198	1198	1198	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3
2.5°	410.7	410.4	410.1	409.8	409.4	408.9	408.1	407.5	406.8	406.0	406.7
5°	409.3	408.9	408.5	408.1	407.6	406.8	405.8	404.7	403.7	402.6	403.3
7.5°	405.0	404.6	404.0	403.5	403.0	402.1	400.9	399.6	398.4	397.1	397.3
10°	401.5	400.9	400.3	399.7	399.2	398.0	396.4	394.8	393.1	391.5	391.3
12.5°	397.1	396.3	395.6	394.9	394.2	392.8	390.7	388.6	386.5	384.3	383.9
15°	389.2	388.3	387.4	386.5	385.6	383.8	381.0	378.2	375.4	372.6	371.0
17.5°	379.7	378.3	376.9	375.5	374.1	371.7	368.1	364.5	360.9	357.3	355.5
20°	372.6	371.0	369.3	367.6	366.0	363.1	359.0	354.9	350.8	346.7	344.6
22.5°	364.9	363.1	361.2	359.4	357.5	354.2	349.6	345.0	340.4	335.7	333.0
25°	353.4	350.7	348.1	345.4	342.8	338.8	333.3	327.9	322.5	317.1	313.6
27.5°	339.4	336.6	333.7	330.8	327.9	323.4	317.3	311.2	305.1	299.0	295.1
30°	329.6	326.5	323.3	320.2	317.2	312.3	305.7	299.1	292.5	285.9	281.8
32.5°	320.2	316.5	312.8	309.2	305.5	300.4	293.7	286.9	280.2	273.5	268.7
35°	304.4	300.3	296.0	291.9	287.6	281.9	274.7	267.4	260.2	253.0	247.8
37.5°	288.8	284.1	279.5	274.9	270.3	264.2	256.4	248.7	241.0	233.3	227.6
40°	277.8	272.9	267.9	262.9	258.0	251.6	243.6	235.6	227.6	219.6	213.8
42.5°	266.5	261.3	256.1	250.9	245.7	239.0	230.7	222.5	214.3	206.0	200.0
45°	248.9	243.4	237.8	232.4	226.8	219.7	211.1	202.4	193.8	185.2	179.4
47.5°	231.7	225.8	220.0	214.2	208.3	201.0	192.0	183.1	174.1	165.3	159.5
50°	219.2	213.4	207.6	201.7	195.9	188.4	179.4	170.3	161.3	152.2	146.5
52.5°	207.1	201.0	194.9	188.8	182.7	175.2	166.3	157.5	148.6	139.7	134.3
55°	189.2	182.9	176.4	170.0	163.5	156.0	147.0	138.1	129.2	120.3	115.4
57.5°	171.0	164.4	157.8	151.2	144.6	137.1	128.5	120.0	111.5	102.9	98.3
60°	158.5	152.0	145.4	138.8	132.2	124.7	116.2	107.7	99.2	90.7	86.5
62.5°	146.3	139.8	133.2	126.6	120.0	112.7	104.6	96.5	88.5	80.4	76.4
65°	127.8	121.1	114.5	107.8	101.1	94.1	86.7	79.2	71.8	64.4	61.6
67.5°	109.8	103.2	96.6	90.0	83.4	76.7	70.0	63.4	56.7	50.1	48.8
70°	97.4	91.0	84.5	78.2	71.7	65.7	60.0	54.3	48.7	43.0	42.2
72.5°	85.5	79.4	73.2	67.1	60.9	55.6	51.0	46.5	41.9	37.3	36.6
75°	68.2	62.4	56.7	50.9	45.1	40.8	38.0	35.2	32.4	29.6	29.0
77.5°	51.0	46.0	40.9	35.9	30.8	27.6	26.3	24.9	23.6	22.3	21.9
80°	40.4	36.2	32.0	27.8	23.6	21.0	20.2	19.4	18.6	17.8	17.4
82.5°	30.6	27.3	24.1	20.8	17.5	15.6	15.0	14.4	13.9	13.4	13.1
85°	15.9	14.2	12.5	10.8	9.0	8.0	7.7	7.5	7.3	7.0	7.0
87.5°	4.9	4.8	4.7	4.6	4.5	4.6	4.9	5.2	5.5	5.9	6.0
90°	0.9	3.0	5.1	7.3	9.4	11.2	12.7	14.3	15.8	17.4	18.3
92.5°	17.5	17.3	17.1	17.0	16.7	17.0	17.8	18.6	19.3	20.1	20.6
95°	56.3	50.0	43.6	37.3	30.9	28.4	29.8	31.1	32.4	33.8	34.7
97.5°	111.8	93.9	76.0	58.0	40.2	32.8	35.9	39.0	42.2	45.2	46.0
100°	153.4	127.0	100.6	74.3	47.9	36.3	39.5	42.9	46.1	49.4	51.0
102.5°	199.2	193.6	188.0	182.4	176.8	160.4	133.0	105.6	78.2	50.8	52.8
105°	263.5	269.3	275.0	280.8	286.6	263.2	210.6	158.0	105.4	52.8	55.0
107.5°	336.8	341.4	346.1	350.7	355.5	326.3	263.2	200.2	137.1	74.0	71.8
110°	383.9	388.0	392.1	396.1	400.1	374.3	318.6	263.0	207.3	151.6	132.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	428.4	431.9	435.5	439.0	442.6	437.6	423.8	410.1	396.3	382.5	312.3
115°	498.4	501.7	504.9	508.2	511.4	515.5	520.3	525.1	529.9	534.8	445.6
117.5°	560.9	564.6	568.3	571.9	575.6	579.0	582.4	585.7	589.0	592.3	570.7
120°	606.7	609.6	612.5	615.4	618.2	621.4	624.9	628.4	631.9	635.3	637.6
122.5°	645.6	648.6	651.6	654.7	657.7	661.1	664.9	668.6	672.5	676.2	677.6
125°	704.7	707.1	709.6	712.2	714.6	717.7	721.4	725.0	728.7	732.4	733.7
127.5°	758.2	761.0	763.8	766.5	769.3	772.0	774.8	777.5	780.2	783.0	785.0
130°	792.1	795.2	798.3	801.4	804.5	807.1	809.2	811.3	813.4	815.5	817.7
132.5°	826.8	829.5	832.1	834.7	837.3	839.7	841.8	843.9	846.0	848.2	849.9
135°	871.9	875.0	878.1	881.2	884.2	886.6	888.4	890.1	891.9	893.6	895.5
137.5°	917.5	919.7	921.8	924.0	926.1	928.1	930.2	932.1	934.1	936.0	937.9
140°	947.3	948.8	950.4	951.9	953.5	955.3	957.4	959.5	961.6	963.8	965.5
142.5°	972.2	973.6	975.0	976.4	977.8	979.7	982.1	984.6	987.0	989.4	991.0
145°	1011.5	1011.2	1011.1	1010.9	1010.6	1012.2	1015.5	1018.7	1022.1	1025.3	1026.6
147.5°	1045.6	1044.9	1044.2	1043.4	1042.7	1043.9	1047.2	1050.4	1053.6	1056.9	1057.9
150°	1067.8	1066.4	1065.1	1063.7	1062.4	1063.2	1066.3	1069.4	1072.5	1075.5	1076.8
152.5°	1086.5	1085.0	1083.5	1082.0	1080.5	1081.2	1084.1	1087.0	1090.0	1092.9	1094.1
155°	1113.7	1112.0	1110.3	1108.5	1106.8	1107.1	1109.4	1111.7	1114.0	1116.3	1117.4
157.5°	1135.1	1133.6	1132.1	1130.7	1129.2	1129.3	1130.9	1132.5	1134.1	1135.7	1137.0
160°	1147.5	1146.4	1145.2	1144.0	1142.9	1142.9	1144.0	1145.2	1146.4	1147.5	1148.7
162.5°	1158.6	1157.5	1156.3	1155.1	1154.0	1153.9	1154.9	1155.9	1156.9	1157.9	1159.2
165°	1173.5	1172.3	1171.2	1170.0	1168.9	1168.6	1169.1	1169.8	1170.4	1170.9	1172.2
167.5°	1184.6	1183.5	1182.3	1181.1	1180.0	1179.7	1180.2	1180.7	1181.3	1181.9	1183.2
170°	1190.8	1189.7	1188.5	1187.4	1186.3	1185.9	1186.3	1186.6	1187.0	1187.4	1188.7
172.5°	1195.0	1193.8	1192.7	1191.6	1190.4	1190.0	1190.4	1190.7	1191.2	1191.6	1192.9
175°	1200.4	1199.1	1197.7	1196.4	1195.0	1194.5	1194.9	1195.3	1195.6	1196.0	1197.4
177.5°	1201.3	1200.2	1199.1	1198.0	1196.9	1196.5	1196.6	1196.8	1196.9	1197.1	1198.2
180°	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3
2.5°	407.3	408.0	408.6	408.9	408.8	408.6	408.5	408.4
5°	404.1	404.8	405.5	405.8	405.5	405.3	405.0	404.8
7.5°	397.5	397.8	397.9	397.9	397.5	397.0	396.6	396.2
10°	391.0	390.8	390.5	390.1	389.6	389.1	388.7	388.2
12.5°	383.5	383.0	382.6	382.0	381.2	380.3	379.5	378.7
15°	369.5	367.9	366.3	365.2	364.4	363.5	362.6	361.8
17.5°	353.6	351.7	349.9	348.3	346.8	345.4	344.0	342.6
20°	342.6	340.5	338.4	336.5	334.7	332.9	331.1	329.3
22.5°	330.4	327.8	325.1	323.1	321.7	320.4	319.0	317.7
25°	310.3	306.9	303.5	301.3	300.0	298.7	297.5	296.3
27.5°	291.1	287.1	283.2	280.3	278.3	276.4	274.4	272.5
30°	277.5	273.4	269.1	266.0	263.7	261.5	259.3	257.1
32.5°	263.9	259.1	254.3	250.9	248.8	246.7	244.6	242.6
35°	242.6	237.4	232.2	228.7	226.9	225.1	223.3	221.5
37.5°	221.8	216.1	210.4	206.5	204.5	202.4	200.3	198.2
40°	208.0	202.1	196.2	192.2	190.1	188.0	185.8	183.7
42.5°	193.9	187.8	181.8	177.8	175.7	173.7	171.5	169.5
45°	173.5	167.6	161.8	157.9	156.0	153.9	152.0	150.0
47.5°	153.6	147.8	142.0	138.2	136.4	134.6	132.8	131.0
50°	140.9	135.2	129.5	125.8	124.1	122.4	120.6	118.9
52.5°	128.8	123.4	117.9	114.3	112.8	111.1	109.5	107.9
55°	110.5	105.6	100.6	97.3	95.8	94.2	92.7	91.2
57.5°	93.8	89.3	84.8	81.9	80.6	79.2	77.9	76.6
60°	82.3	78.2	73.9	71.2	69.9	68.6	67.3	66.0
62.5°	72.4	68.4	64.4	62.0	61.1	60.4	59.6	58.8
65°	58.9	56.0	53.2	51.7	51.4	51.2	51.0	50.7
67.5°	47.5	46.2	44.9	44.2	43.9	43.6	43.4	43.1
70°	41.3	40.5	39.7	39.1	38.7	38.4	38.1	37.7
72.5°	36.0	35.2	34.6	34.2	33.9	33.8	33.5	33.3
75°	28.5	27.9	27.3	27.0	26.9	26.8	26.7	26.7
77.5°	21.5	21.2	20.9	20.7	20.5	20.4	20.3	20.1
80°	17.1	16.8	16.5	16.3	16.3	16.3	16.3	16.3
82.5°	13.0	12.7	12.6	12.5	12.5	12.5	12.5	12.5
85°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
87.5°	6.1	6.2	6.4	6.4	6.5	6.6	6.7	6.8
90°	19.2	20.2	21.2	21.9	22.3	22.7	23.0	23.4
92.5°	21.1	21.6	22.1	22.5	22.7	22.9	23.2	23.4
95°	35.7	36.7	37.7	38.1	37.8	37.7	37.4	37.3
97.5°	46.8	47.5	48.3	48.8	49.1	49.3	49.5	49.7
100°	52.5	54.1	55.6	56.5	56.9	57.3	57.7	58.0
102.5°	54.8	56.8	58.8	60.1	60.6	61.1	61.7	62.2
105°	57.1	59.2	61.3	62.8	63.6	64.3	65.1	65.9
107.5°	69.7	67.5	65.4	64.7	65.5	66.2	67.0	67.8
110°	113.2	93.9	74.6	65.4	66.1	66.9	67.7	68.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	242.1	171.8	101.5	66.7	67.3	67.9	68.6	69.1
115°	356.4	267.3	178.1	126.5	112.7	98.8	85.0	71.1
117.5°	549.2	527.6	506.1	472.5	426.9	381.3	335.7	290.2
120°	639.9	642.2	644.6	632.7	606.7	580.7	554.6	528.7
122.5°	679.0	680.4	681.8	679.9	674.9	669.8	664.8	659.7
125°	735.1	736.4	737.8	738.7	739.3	739.9	740.5	741.0
127.5°	786.9	788.9	790.8	791.9	792.0	792.1	792.2	792.3
130°	819.8	821.9	824.0	825.0	824.8	824.6	824.4	824.3
132.5°	851.7	853.6	855.4	856.2	856.0	855.8	855.7	855.4
135°	897.4	899.4	901.2	902.0	901.6	901.2	900.9	900.5
137.5°	939.8	941.7	943.5	944.2	943.5	942.9	942.2	941.6
140°	967.3	969.0	970.7	971.1	970.1	969.1	968.2	967.3
142.5°	992.5	994.2	995.7	996.1	995.1	994.1	993.2	992.2
145°	1028.0	1029.3	1030.7	1030.9	1030.0	1029.0	1028.0	1027.0
147.5°	1058.8	1059.9	1060.9	1060.9	1060.1	1059.3	1058.5	1057.7
150°	1077.9	1079.0	1080.2	1080.3	1079.3	1078.4	1077.4	1076.4
152.5°	1095.2	1096.4	1097.6	1097.5	1096.2	1094.9	1093.6	1092.4
155°	1118.6	1119.8	1121.0	1120.7	1119.2	1117.7	1116.1	1114.6
157.5°	1138.3	1139.6	1140.9	1140.8	1139.4	1137.8	1136.4	1134.8
160°	1149.8	1151.0	1152.1	1152.0	1150.7	1149.3	1148.0	1146.6
162.5°	1160.5	1161.8	1163.2	1162.9	1161.3	1159.7	1158.0	1156.3
165°	1173.6	1174.9	1176.3	1176.3	1174.9	1173.6	1172.2	1170.9
167.5°	1184.5	1185.9	1187.2	1187.0	1185.3	1183.6	1181.9	1180.1
170°	1190.1	1191.4	1192.8	1192.5	1190.8	1189.1	1187.4	1185.6
172.5°	1194.3	1195.6	1196.9	1196.8	1195.0	1193.3	1191.6	1189.8
175°	1198.7	1200.1	1201.4	1201.2	1199.2	1197.3	1195.4	1193.4
177.5°	1199.2	1200.3	1201.4	1201.3	1199.9	1198.5	1197.1	1195.7
180°	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8	1197.8

(END OF REPORT)