

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: P331697-840

Luminaire Tested: **SA2XXRDIP-C675D925U840-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331697-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C675D925U840-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 675 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 925 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

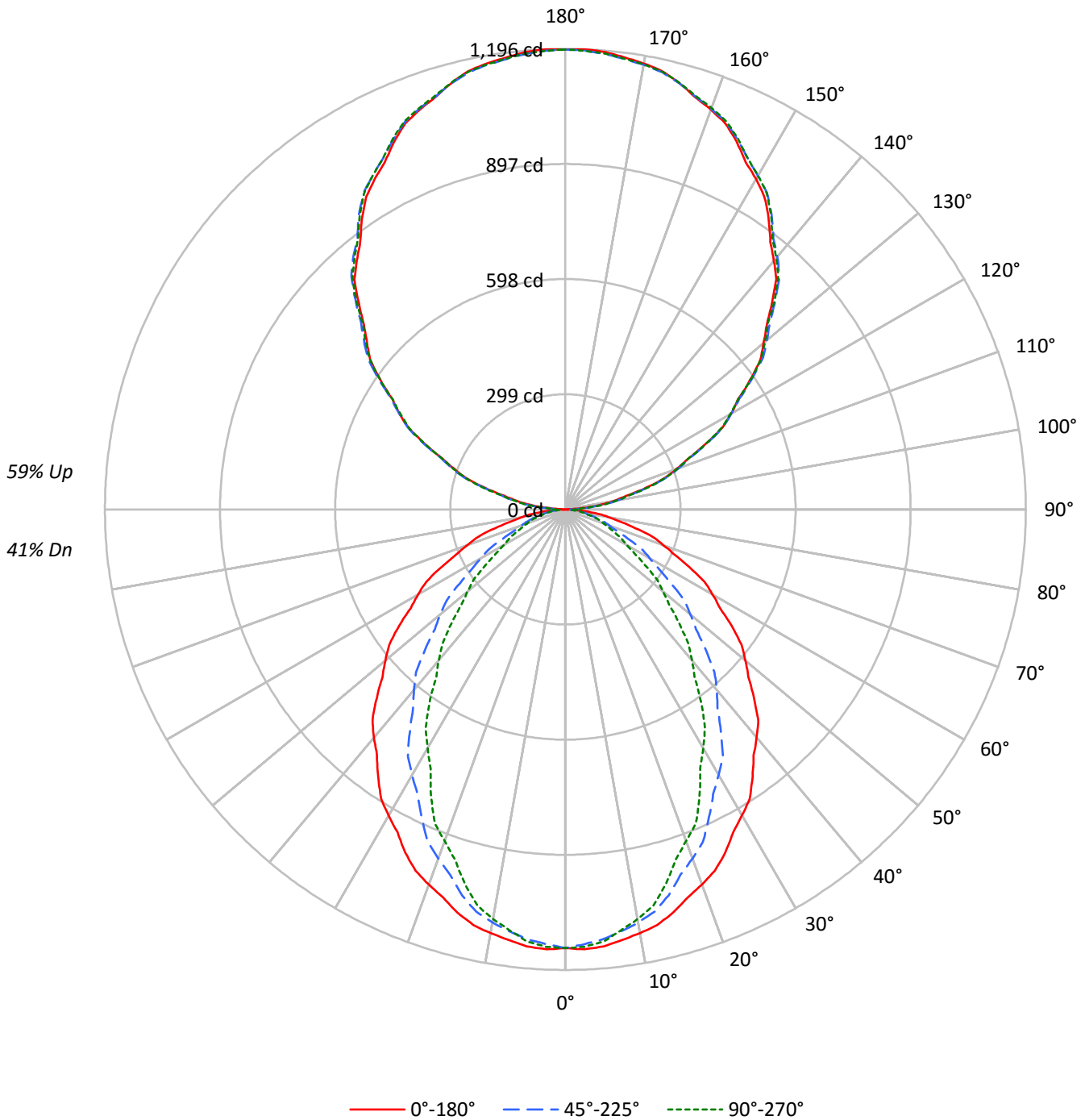
Lumens per Lamp: N/A
Luminaire Lumens: 5687.1 lumens
Efficiency: N/A
Efficacy: 109.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 52
Input Voltage (V): 120
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	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	105	105	105	105	96	96	96	96	78	78	78	63	63	63	48	48	48	41				
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	43	42	41	36				
2	88	81	75	70	80	74	69	65	61	58	55	49	47	45	38	37	35	30				
3	80	71	64	59	73	65	59	55	54	50	46	44	41	38	34	32	31	26				
4	74	63	56	50	67	58	52	47	48	44	40	39	36	33	31	29	27	23				
5	68	57	49	43	62	52	45	40	44	38	34	36	32	29	28	26	23	20				
6	63	51	43	37	57	47	40	35	39	34	30	32	28	25	26	23	21	18				
7	58	46	38	33	53	42	36	31	36	31	27	29	26	23	23	21	19	16				
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	22	19	17	14				
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	17	15	13				
10	47	35	28	23	43	33	26	22	28	23	19	23	19	17	19	16	14	12				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	18392	18392	18392
5°	18462	18162	18263
10°	18321	17864	17713
15°	18111	17336	16836
20°	17819	16579	15747
25°	17521	15720	14694
30°	17107	14838	13340
35°	16703	13878	12151
40°	16297	12886	10777
45°	15819	11768	9533
50°	15330	10643	8312
55°	14829	9433	7139
60°	14247	8157	5926
65°	13589	6854	5398
70°	12798	5646	4961
75°	11834	5147	4629
80°	10451	4603	4212
85°	8207	3631	3631



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	106.6	1.9
10°-20°	292.8	5.1
20°-30°	411.1	7.2
30°-40°	448.3	7.9
40°-50°	412.2	7.2
50°-60°	323.8	5.7
60°-70°	211.1	3.7
70°-80°	108.8	1.9
80°-90°	33.0	0.6
90°-100°	75.7	1.3
100°-110°	235.0	4.1
110°-120°	401.8	7.1
120°-130°	528.3	9.3
130°-140°	593.0	10.4
140°-150°	581.4	10.2
150°-160°	487.7	8.6
160°-170°	323.5	5.7
170°-180°	113.0	2.0
0°-30°	810.5	14.3
0°-40°	1258.9	22.1
0°-60°	1994.8	35.1
0°-90°	2347.7	41.3
90°-120°	712.5	12.5
90°-150°	2415.2	42.5
90°-180°	3339.0	58.7
0°-180°	5687.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1139	1139	1139	1139	1139	
5°	1139	1134	1121	1129	1127	108
15°	1084	1071	1037	1018	1007	305
25°	984	949	882	842	825	452
35°	847	793	704	642	616	530
45°	693	622	515	445	418	535
55°	527	445	335	276	254	471
65°	356	272	179	146	141	352
75°	190	120	82	76	74	201
85°	44	24	20	20	20	52
90°	1	14	35	33	34	5
95°	52	62	64	64	62	60
105°	217	220	222	224	224	229
115°	403	409	407	406	403	399
125°	586	595	593	590	588	524
135°	759	769	772	771	768	586
145°	921	928	934	935	931	575
155°	1053	1056	1059	1064	1061	485
165°	1146	1145	1145	1151	1147	323
175°	1192	1189	1187	1194	1188	113
180°	1194	1194	1194	1194	1194	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1
2.5°	1143.3	1142.4	1141.5	1140.5	1139.6	1138.1	1136.1	1134.1	1132.2	1130.1	1132.0
5°	1139.1	1138.0	1136.9	1135.7	1134.6	1132.6	1129.5	1126.6	1123.6	1120.6	1122.7
7.5°	1127.4	1126.0	1124.6	1123.2	1121.8	1119.2	1115.8	1112.4	1108.8	1105.4	1105.9
10°	1117.5	1115.9	1114.3	1112.7	1111.1	1108.0	1103.4	1098.8	1094.3	1089.6	1089.0
12.5°	1105.1	1103.2	1101.2	1099.2	1097.2	1093.4	1087.5	1081.7	1075.7	1069.9	1068.6
15°	1083.5	1081.0	1078.4	1075.9	1073.4	1068.2	1060.5	1052.7	1044.9	1037.1	1032.8
17.5°	1056.9	1053.1	1049.2	1045.3	1041.5	1034.6	1024.6	1014.6	1004.6	994.6	989.5
20°	1037.1	1032.5	1027.9	1023.4	1018.8	1010.8	999.3	987.8	976.4	964.9	959.2
22.5°	1015.6	1010.6	1005.4	1000.3	995.1	986.1	973.2	960.3	947.4	934.4	927.1
25°	983.5	976.1	968.9	961.5	954.2	942.9	927.9	912.7	897.6	882.4	873.0
27.5°	944.7	936.8	928.8	920.8	912.8	900.3	883.3	866.3	849.2	832.1	821.2
30°	917.6	908.8	900.1	891.4	882.7	869.2	850.8	832.5	814.2	795.9	784.2
32.5°	891.1	880.9	870.8	860.6	850.4	836.0	817.3	798.6	779.9	761.2	747.9
35°	847.4	835.8	824.0	812.3	800.7	784.8	764.6	744.5	724.3	704.1	689.6
37.5°	803.8	790.8	778.0	765.2	752.3	735.2	713.8	692.3	670.8	649.2	633.4
40°	773.2	759.4	745.7	732.0	718.2	700.2	678.0	655.8	633.6	611.4	595.1
42.5°	741.8	727.4	712.9	698.4	684.0	665.2	642.3	619.4	596.3	573.4	556.5
45°	692.8	677.4	662.1	646.7	631.4	611.7	587.6	563.6	539.5	515.4	499.2
47.5°	644.9	628.6	612.4	596.1	579.9	559.4	534.5	509.7	484.8	460.0	443.8
50°	610.3	594.0	577.7	561.5	545.2	524.5	499.3	474.1	448.9	423.7	407.9
52.5°	576.5	559.5	542.5	525.5	508.5	487.7	463.0	438.4	413.7	389.1	373.9
55°	526.8	509.0	491.1	473.2	455.3	434.0	409.3	384.6	359.8	335.1	321.3
57.5°	475.8	457.6	439.2	420.9	402.5	381.5	357.7	334.0	310.1	286.4	273.8
60°	441.2	422.9	404.6	386.3	367.9	347.0	323.4	299.7	276.2	252.6	240.9
62.5°	407.4	389.1	370.7	352.4	334.1	313.7	291.2	268.7	246.2	223.7	212.6
65°	355.7	337.1	318.5	300.0	281.4	261.9	241.3	220.7	200.0	179.4	171.6
67.5°	305.8	287.3	268.9	250.5	232.1	213.6	195.0	176.5	157.9	139.4	135.8
70°	271.1	253.3	235.4	217.5	199.7	182.8	167.0	151.2	135.4	119.6	117.2
72.5°	238.1	221.0	203.9	186.7	169.6	154.7	142.0	129.3	116.6	103.9	102.0
75°	189.7	173.7	157.6	141.6	125.5	113.6	105.8	98.1	90.3	82.5	80.9
77.5°	142.1	127.9	113.9	99.9	85.8	76.9	73.1	69.4	65.6	61.9	60.9
80°	112.4	100.7	89.0	77.4	65.6	58.7	56.4	54.0	51.8	49.5	48.6
82.5°	85.1	76.0	67.0	57.8	48.7	43.3	41.8	40.2	38.7	37.2	36.6
85°	44.3	39.5	34.7	29.9	25.0	22.3	21.6	21.0	20.3	19.6	19.6
87.5°	13.4	12.4	11.5	10.6	9.7	9.7	10.7	11.7	12.6	13.6	13.3
90°	1.0	3.7	6.4	9.1	11.7	15.6	20.5	25.4	30.3	35.2	34.8
92.5°	18.0	19.9	21.9	23.8	25.9	27.4	28.6	29.7	30.9	32.0	32.1
95°	52.4	54.6	56.9	59.1	61.4	62.7	63.1	63.6	64.0	64.5	64.5
97.5°	95.7	97.8	99.7	101.7	103.6	105.0	105.9	106.7	107.6	108.5	108.5
100°	127.9	129.8	131.6	133.4	135.1	136.4	137.0	137.7	138.5	139.1	139.1
102.5°	161.9	163.3	164.7	166.1	167.5	168.7	169.6	170.5	171.3	172.2	172.3
105°	216.7	217.3	218.0	218.7	219.3	219.9	220.4	220.9	221.3	221.7	222.2
107.5°	271.9	272.9	273.9	274.9	275.9	276.3	276.3	276.3	276.3	276.3	276.5
110°	307.4	308.7	310.0	311.4	312.8	313.5	313.5	313.5	313.5	313.5	313.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	346.1	347.4	348.8	350.1	351.4	352.0	351.8	351.6	351.5	351.3	350.8
115°	403.1	404.5	405.8	407.2	408.5	408.9	408.5	408.1	407.6	407.2	407.0
117.5°	460.0	461.7	463.5	465.3	467.2	467.4	466.2	464.8	463.6	462.4	461.8
120°	497.9	499.7	501.4	503.2	505.0	505.0	503.2	501.4	499.7	497.9	497.9
122.5°	532.5	534.6	536.8	539.0	541.1	541.6	540.3	539.1	537.9	536.5	536.0
125°	586.5	588.5	590.6	592.6	594.6	595.3	594.6	593.9	593.3	592.6	591.9
127.5°	639.1	641.7	644.3	646.8	649.3	650.3	649.4	648.6	647.8	647.0	646.2
130°	672.2	675.1	678.0	681.0	683.9	685.1	684.6	684.2	683.8	683.3	682.9
132.5°	709.3	711.7	714.1	716.4	718.8	720.0	720.1	720.2	720.2	720.3	719.4
135°	758.9	761.3	763.8	766.3	768.7	770.2	770.6	771.0	771.5	771.9	771.7
137.5°	811.1	813.0	815.1	817.1	819.1	820.4	821.0	821.6	822.2	822.7	822.6
140°	842.5	844.6	846.6	848.6	850.6	852.1	853.2	854.3	855.6	856.7	856.7
142.5°	874.7	876.8	878.8	880.8	882.8	884.2	884.9	885.8	886.5	887.3	887.5
145°	921.1	922.7	924.2	925.8	927.4	928.9	930.2	931.5	932.9	934.2	934.4
147.5°	962.4	964.3	966.2	968.1	970.0	971.4	972.3	973.1	974.0	974.9	975.4
150°	990.7	992.0	993.3	994.7	996.0	997.1	998.0	999.0	999.9	1000.8	1001.4
152.5°	1015.6	1017.0	1018.3	1019.7	1021.1	1022.3	1023.3	1024.4	1025.4	1026.5	1027.4
155°	1053.2	1053.8	1054.5	1055.2	1055.8	1056.5	1057.2	1057.8	1058.5	1059.1	1060.4
157.5°	1085.2	1085.6	1086.1	1086.5	1087.0	1087.4	1087.8	1088.2	1088.6	1089.0	1090.6
160°	1104.6	1105.0	1105.4	1105.9	1106.3	1106.7	1106.9	1107.1	1107.3	1107.5	1108.9
162.5°	1122.3	1122.4	1122.5	1122.6	1122.7	1122.8	1123.1	1123.3	1123.5	1123.7	1125.2
165°	1145.9	1145.7	1145.4	1145.2	1145.0	1144.9	1144.9	1144.9	1144.9	1144.9	1146.4
167.5°	1165.6	1165.0	1164.3	1163.6	1163.0	1162.6	1162.6	1162.5	1162.5	1162.4	1164.0
170°	1176.1	1175.4	1174.8	1174.1	1173.4	1173.0	1172.8	1172.6	1172.3	1172.0	1173.7
172.5°	1183.4	1182.7	1182.0	1181.3	1180.6	1180.2	1180.0	1179.7	1179.5	1179.3	1180.9
175°	1192.2	1191.5	1190.8	1190.2	1189.5	1189.0	1188.5	1188.1	1187.6	1187.2	1188.7
177.5°	1195.9	1195.3	1194.8	1194.3	1193.7	1193.3	1192.9	1192.5	1192.1	1191.8	1192.9
180°	1194.3	1194.3	1194.3	1194.3	1194.3	1194.3	1194.3	1194.3	1194.3	1194.3	1194.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1
2.5°	1133.8	1135.6	1137.4	1138.1	1137.8	1137.4	1137.1	1136.7
5°	1124.7	1126.8	1128.8	1129.5	1128.8	1128.1	1127.5	1126.8
7.5°	1106.5	1107.1	1107.7	1107.4	1106.2	1105.1	1103.9	1102.7
10°	1088.3	1087.6	1086.9	1085.9	1084.5	1083.2	1081.8	1080.4
12.5°	1067.4	1066.2	1064.9	1063.2	1060.9	1058.6	1056.3	1054.0
15°	1028.4	1024.0	1019.7	1016.3	1014.1	1011.8	1009.5	1007.2
17.5°	984.3	979.1	973.9	969.4	965.4	961.5	957.6	953.6
20°	953.5	947.8	942.0	936.6	931.6	926.6	921.5	916.5
22.5°	919.7	912.3	904.9	899.4	895.5	891.8	888.1	884.3
25°	863.6	854.2	844.9	838.5	835.1	831.6	828.2	824.8
27.5°	810.2	799.3	788.4	780.1	774.7	769.2	763.8	758.3
30°	772.5	760.8	749.1	740.2	734.0	727.8	721.6	715.5
32.5°	734.6	721.2	707.9	698.3	692.5	686.7	680.9	675.1
35°	675.3	660.9	646.4	636.6	631.6	626.5	621.6	616.5
37.5°	617.4	601.6	585.7	574.8	569.1	563.3	557.5	551.8
40°	578.8	562.5	546.2	535.1	529.2	523.2	517.3	511.3
42.5°	539.8	522.9	506.1	494.8	489.1	483.3	477.6	471.7
45°	482.9	466.7	450.4	439.5	434.0	428.5	423.0	417.5
47.5°	427.7	411.5	395.3	384.8	379.7	374.8	369.7	364.8
50°	392.1	376.3	360.5	350.1	345.4	340.5	335.8	330.9
52.5°	358.6	343.3	328.0	318.2	313.8	309.3	304.9	300.4
55°	307.6	293.8	280.0	271.0	266.7	262.3	257.9	253.6
57.5°	261.2	248.6	236.0	227.8	224.2	220.6	216.8	213.2
60°	229.2	217.5	205.8	198.1	194.5	190.9	187.1	183.5
62.5°	201.5	190.3	179.2	172.5	170.3	168.1	165.9	163.7
65°	163.8	156.0	148.2	144.0	143.3	142.6	141.9	141.3
67.5°	132.2	128.7	125.1	122.9	122.2	121.5	120.8	120.0
70°	115.0	112.7	110.4	108.9	107.9	106.9	106.0	105.1
72.5°	100.1	98.2	96.2	95.0	94.4	93.9	93.3	92.8
75°	79.3	77.7	76.0	75.1	74.9	74.7	74.4	74.2
77.5°	60.0	59.1	58.2	57.6	57.2	56.9	56.5	56.0
80°	47.7	46.8	45.8	45.3	45.3	45.3	45.3	45.3
82.5°	36.1	35.4	34.9	34.6	34.6	34.6	34.6	34.6
85°	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6
87.5°	13.1	12.8	12.5	12.4	12.5	12.5	12.6	12.6
90°	34.3	33.9	33.5	33.3	33.6	33.8	34.0	34.2
92.5°	32.2	32.3	32.4	32.5	32.5	32.5	32.6	32.6
95°	64.5	64.5	64.5	64.2	63.8	63.4	62.9	62.5
97.5°	108.5	108.5	108.5	108.5	108.4	108.4	108.3	108.3
100°	139.1	139.1	139.1	139.0	138.8	138.6	138.3	138.0
102.5°	172.5	172.7	172.9	172.8	172.6	172.4	172.2	172.0
105°	222.6	223.1	223.5	223.7	223.7	223.7	223.7	223.7
107.5°	276.7	276.9	277.0	276.6	275.6	274.6	273.6	272.5
110°	313.5	313.5	313.5	313.1	312.5	311.7	311.0	310.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	350.2	349.7	349.2	348.6	348.2	347.7	347.2	346.7
115°	406.7	406.5	406.3	405.8	405.2	404.5	403.7	403.1
117.5°	461.3	460.8	460.2	459.6	459.0	458.3	457.6	457.0
120°	497.9	497.9	497.9	497.6	496.9	496.1	495.5	494.8
122.5°	535.4	534.9	534.4	533.9	533.4	532.9	532.4	531.9
125°	591.3	590.6	589.9	589.5	589.3	589.0	588.8	588.5
127.5°	645.4	644.6	643.8	643.0	642.3	641.6	640.9	640.2
130°	682.4	682.0	681.5	680.9	679.9	679.0	678.1	677.2
132.5°	718.4	717.4	716.4	715.6	714.9	714.2	713.5	712.8
135°	771.5	771.3	771.0	770.6	769.9	769.3	768.6	767.9
137.5°	822.4	822.2	822.0	821.5	820.6	819.7	818.8	817.9
140°	856.7	856.7	856.7	856.2	855.3	854.3	853.5	852.6
142.5°	887.7	887.8	888.0	887.7	886.8	885.9	884.9	884.0
145°	934.6	934.9	935.1	934.8	933.9	933.0	932.1	931.2
147.5°	975.9	976.4	976.9	976.7	975.9	975.0	974.2	973.3
150°	1002.1	1002.8	1003.4	1003.4	1002.8	1002.1	1001.4	1000.8
152.5°	1028.2	1029.1	1030.0	1030.0	1029.1	1028.2	1027.4	1026.5
155°	1061.5	1062.6	1063.7	1063.9	1063.2	1062.6	1061.9	1061.2
157.5°	1092.1	1093.6	1095.1	1095.3	1094.3	1093.2	1092.1	1091.1
160°	1110.2	1111.6	1113.0	1113.2	1112.3	1111.4	1110.4	1109.5
162.5°	1126.7	1128.2	1129.7	1130.0	1128.9	1127.8	1126.8	1125.7
165°	1148.0	1149.5	1151.1	1151.3	1150.2	1149.1	1148.0	1146.9
167.5°	1165.5	1167.1	1168.6	1168.8	1167.7	1166.5	1165.4	1164.2
170°	1175.2	1176.8	1178.3	1178.4	1177.1	1175.8	1174.4	1173.1
172.5°	1182.5	1184.1	1185.6	1185.7	1184.4	1183.1	1181.6	1180.3
175°	1190.3	1191.8	1193.5	1193.6	1192.2	1190.8	1189.5	1188.2
177.5°	1194.0	1195.1	1196.1	1196.1	1195.1	1194.0	1192.9	1191.8
180°	1194.3	1194.3	1194.3	1194.3	1194.3	1194.3	1194.3	1194.3

(END OF REPORT)