

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: P332224-940

Luminaire Tested: **S123DIW-S1165D1030U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332224-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S1165D1030U940-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1030 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8003.7 lumens
Efficiency: N/A
Efficacy: 118.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: General Diffuse

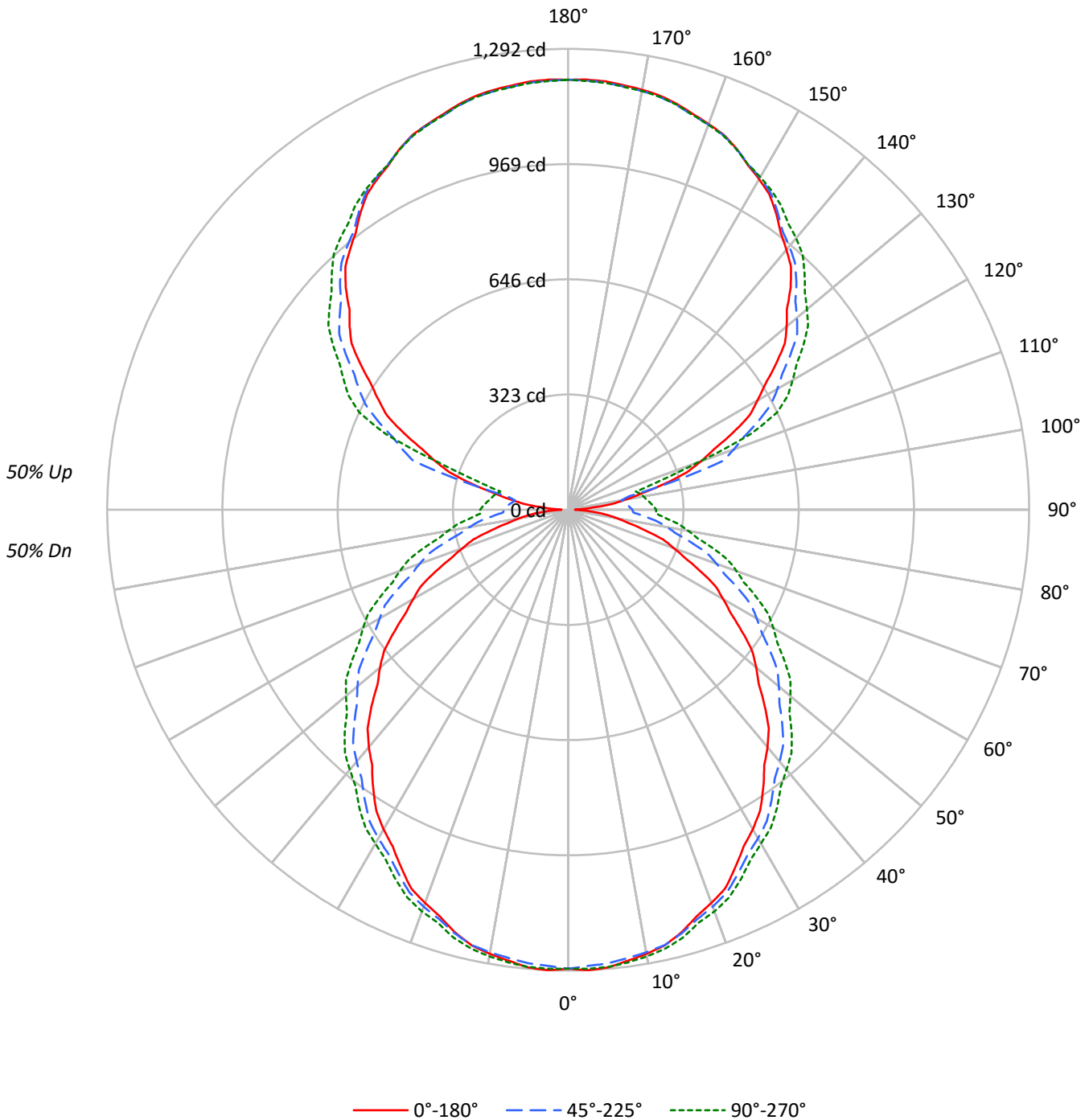
Input Watts (W): 67.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50				
1	97	92	88	84	89	85	81	78	71	69	66	59	57	55	48	46	45	40				
2	88	80	73	68	80	73	68	63	62	58	54	51	48	45	41	39	37	32				
3	80	70	62	56	73	64	58	52	54	49	45	45	41	38	36	33	31	27				
4	73	61	53	47	67	57	49	44	48	42	38	40	36	32	32	29	27	23				
5	67	55	46	40	61	50	43	37	43	37	32	36	31	28	29	26	23	20				
6	61	49	40	34	56	45	38	32	38	33	28	32	28	24	26	23	20	17				
7	57	44	36	30	52	41	34	28	35	29	25	29	25	21	24	20	18	15				
8	52	40	32	27	48	37	30	25	32	26	22	27	22	19	22	18	16	13				
9	49	36	29	24	45	34	27	22	29	23	20	24	20	17	20	17	14	12				
10	46	33	26	21	42	31	24	20	27	21	18	23	18	15	19	15	13	11				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13850	13850	13850
5°	13894	13501	13509
10°	13769	13190	13124
15°	13592	12837	12705
20°	13338	12435	12243
25°	13025	11969	11757
30°	12705	11553	11264
35°	12344	11111	10871
40°	12002	10709	10450
45°	11622	10323	10113
50°	11245	9942	9744
55°	10831	9553	9410
60°	10426	9156	9068
65°	10013	8733	8661
70°	9389	8257	8243
75°	8597	7713	7819
80°	7695	7181	7334
85°	6853	6811	7053



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.0	1.5
10°-20°	347.7	4.3
20°-30°	520.1	6.5
30°-40°	621.1	7.8
40°-50°	649.8	8.1
50°-60°	609.8	7.6
60°-70°	509.3	6.4
70°-80°	364.4	4.6
80°-90°	220.7	2.8
90°-100°	180.2	2.3
100°-110°	309.1	3.9
110°-120°	568.7	7.1
120°-130°	677.2	8.5
130°-140°	699.8	8.7
140°-150°	642.1	8.0
150°-160°	515.0	6.4
160°-170°	332.3	4.2
170°-180°	114.5	1.4
0°-30°	989.8	12.4
0°-40°	1610.9	20.1
0°-60°	2870.5	35.9
0°-90°	3964.9	49.5
90°-120°	1057.9	13.2
90°-150°	3077.0	38.4
90°-180°	4039.0	50.5
0°-180°	8003.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1287	1287	1287	1287	1287	
5°	1288	1285	1277	1287	1287	122
15°	1226	1230	1229	1242	1242	345
25°	1107	1121	1126	1143	1144	510
35°	953	975	994	1014	1020	596
45°	779	813	848	874	886	601
55°	594	641	691	727	740	532
65°	411	466	527	568	583	406
75°	223	289	359	403	422	238
85°	69	139	213	259	275	72
90°	19	97	180	229	247	15
95°	70	91	167	214	230	80
105°	278	318	301	189	196	294
115°	508	532	588	629	646	501
125°	710	719	761	792	804	634
135°	882	886	904	931	937	678
145°	1015	1020	1022	1034	1040	635
155°	1117	1115	1116	1120	1115	514
165°	1178	1175	1174	1181	1175	333
175°	1206	1201	1202	1208	1201	115
180°	1206	1206	1206	1206	1206	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7
2.5°	1292.4	1291.6	1290.8	1290.1	1289.3	1288.0	1286.0	1284.0	1282.0	1280.1	1282.0
5°	1288.2	1287.5	1286.9	1286.3	1285.7	1284.4	1282.5	1280.7	1278.8	1276.9	1279.4
7.5°	1275.5	1275.7	1275.8	1275.9	1276.0	1275.2	1273.4	1271.6	1269.8	1267.9	1271.0
10°	1264.4	1265.0	1265.6	1266.2	1266.9	1266.3	1264.8	1263.2	1261.7	1260.1	1263.2
12.5°	1250.9	1251.7	1252.6	1253.5	1254.4	1254.3	1253.2	1252.1	1251.1	1250.0	1252.9
15°	1226.5	1227.4	1228.3	1229.3	1230.2	1230.6	1230.2	1229.9	1229.6	1229.3	1232.4
17.5°	1195.6	1197.5	1199.4	1201.2	1203.1	1204.0	1203.9	1203.7	1203.6	1203.5	1206.3
20°	1173.2	1175.1	1177.0	1178.8	1180.7	1182.0	1182.6	1183.2	1183.8	1184.5	1187.2
22.5°	1149.7	1151.6	1153.4	1155.3	1157.2	1158.5	1159.4	1160.3	1161.1	1162.0	1165.6
25°	1107.3	1110.4	1113.6	1116.7	1119.8	1121.8	1122.8	1123.6	1124.6	1125.5	1129.6
27.5°	1064.7	1068.3	1071.8	1075.4	1078.9	1081.7	1083.7	1085.7	1087.7	1089.7	1093.1
30°	1034.5	1038.5	1042.5	1046.6	1050.6	1053.9	1056.4	1058.9	1061.4	1063.9	1067.6
32.5°	1000.8	1005.3	1009.9	1014.4	1019.0	1022.9	1026.1	1029.4	1032.6	1035.8	1039.8
35°	953.1	958.1	963.1	968.1	973.1	977.6	981.7	985.7	989.7	993.8	998.4
37.5°	902.7	908.3	913.9	919.5	925.1	930.4	935.4	940.4	945.4	950.4	955.6
40°	869.1	874.7	880.3	885.8	891.4	897.4	903.7	909.8	916.1	922.3	927.6
42.5°	832.1	838.9	845.8	852.6	859.4	866.1	872.6	879.0	885.6	892.1	897.9
45°	779.4	786.8	794.2	801.7	809.2	816.9	824.7	832.4	840.3	848.0	853.9
47.5°	724.1	732.5	741.0	749.6	758.0	766.7	775.6	784.5	793.4	802.4	809.0
50°	688.2	697.0	705.7	714.3	723.1	732.3	742.0	751.6	761.3	770.9	778.1
52.5°	650.1	659.3	668.5	677.8	687.0	697.0	707.6	718.2	728.9	739.5	747.0
55°	594.3	604.6	614.8	625.2	635.4	646.1	657.4	668.6	679.8	691.1	699.5
57.5°	539.9	550.6	561.3	572.0	582.8	594.3	606.5	618.8	631.1	643.4	651.8
60°	501.8	513.0	524.2	535.5	546.6	558.7	571.4	584.2	597.0	609.8	618.5
62.5°	465.9	477.4	488.8	500.3	511.8	524.2	537.8	551.3	564.8	578.4	587.0
65°	410.7	422.8	435.0	447.1	459.3	472.3	485.9	499.6	513.4	527.0	536.4
67.5°	354.6	367.6	380.4	393.3	406.2	419.6	433.5	447.5	461.5	475.5	485.6
70°	315.4	328.8	342.1	355.5	369.0	383.2	398.1	413.0	428.0	442.9	452.9
72.5°	279.5	292.9	306.3	319.7	333.1	347.5	362.9	378.4	393.9	409.3	419.5
75°	222.8	237.6	252.2	266.8	281.4	296.5	312.1	327.7	343.2	358.8	369.1
77.5°	173.5	188.3	203.0	217.8	232.6	247.8	263.5	279.2	294.9	310.6	321.5
80°	138.8	154.0	169.3	184.6	199.8	215.5	231.8	248.0	264.1	280.4	291.0
82.5°	108.5	124.0	139.6	155.1	170.5	186.5	203.0	219.5	235.9	252.3	262.9
85°	68.7	84.3	99.9	115.4	131.0	147.0	163.5	180.0	196.5	213.0	223.6
87.5°	37.5	53.4	69.3	85.2	101.1	117.3	133.7	150.1	166.5	182.9	193.6
90°	19.1	36.4	53.6	70.9	88.1	106.0	124.5	142.9	161.4	179.9	191.3
92.5°	33.8	47.0	60.2	73.4	86.6	102.0	119.6	137.1	154.8	172.4	184.0
95°	70.1	74.0	78.0	82.0	86.0	96.8	114.1	131.6	149.1	166.6	177.5
97.5°	123.5	130.8	138.1	145.4	152.8	156.5	156.8	157.0	157.3	157.5	168.4
100°	164.0	177.9	191.9	205.8	219.8	218.4	201.7	184.9	168.3	151.5	162.1
102.5°	210.2	221.9	233.8	245.7	257.5	253.5	233.6	213.8	193.9	174.2	178.0
105°	278.1	287.8	297.5	307.1	316.7	319.3	314.9	310.3	305.8	301.3	274.7
107.5°	348.5	356.5	364.6	372.7	380.8	392.7	408.2	423.7	439.3	454.9	437.3
110°	395.3	402.5	409.7	417.0	424.1	435.1	449.7	464.3	479.0	493.7	495.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	441.2	447.2	453.3	459.3	465.4	475.5	489.6	503.7	517.9	532.1	540.0
115°	507.7	512.6	517.5	522.5	527.4	536.4	549.4	562.4	575.4	588.4	597.9
117.5°	573.1	576.9	580.7	584.4	588.3	595.8	607.3	618.8	630.2	641.6	650.6
120°	612.9	616.2	619.6	622.9	626.2	633.4	644.3	655.1	666.0	676.9	685.6
122.5°	654.4	656.7	659.0	661.3	663.5	669.9	680.5	691.0	701.6	712.1	720.1
125°	710.0	711.6	713.2	714.7	716.3	722.0	731.9	741.7	751.5	761.3	768.3
127.5°	765.2	766.4	767.7	769.0	770.3	775.1	783.5	792.0	800.4	808.9	815.6
130°	799.5	800.8	802.1	803.3	804.7	808.8	815.8	822.9	829.9	836.9	843.6
132.5°	831.3	832.9	834.5	836.0	837.5	841.1	846.7	852.3	857.9	863.5	870.0
135°	881.5	882.3	883.2	884.0	884.9	887.5	891.7	896.0	900.2	904.4	910.6
137.5°	924.2	925.4	926.7	927.9	929.2	931.0	933.4	935.8	938.1	940.5	946.4
140°	951.6	952.9	954.0	955.3	956.4	957.8	959.3	960.9	962.4	963.9	969.4
142.5°	978.2	979.1	980.1	981.1	982.0	982.8	983.6	984.4	985.2	986.0	990.8
145°	1015.3	1016.4	1017.4	1018.5	1019.6	1020.3	1020.7	1021.1	1021.5	1021.9	1024.8
147.5°	1048.8	1049.7	1050.6	1051.5	1052.5	1053.1	1053.5	1053.9	1054.3	1054.7	1055.9
150°	1070.3	1070.9	1071.5	1072.1	1072.6	1073.2	1073.5	1074.0	1074.3	1074.8	1075.1
152.5°	1089.7	1089.9	1090.2	1090.5	1090.7	1091.0	1091.3	1091.5	1091.7	1092.0	1092.7
155°	1116.9	1116.4	1116.1	1115.7	1115.3	1115.2	1115.4	1115.5	1115.8	1116.0	1117.0
157.5°	1138.0	1138.0	1137.9	1137.9	1137.8	1137.7	1137.6	1137.3	1137.1	1136.9	1138.1
160°	1150.9	1150.7	1150.5	1150.3	1150.1	1149.9	1149.7	1149.5	1149.3	1149.1	1150.3
162.5°	1163.1	1162.5	1162.1	1161.5	1161.0	1160.7	1160.5	1160.3	1160.0	1159.8	1161.2
165°	1177.8	1177.1	1176.6	1176.0	1175.4	1175.0	1174.7	1174.6	1174.4	1174.2	1175.8
167.5°	1189.2	1188.5	1187.7	1186.9	1186.1	1185.6	1185.6	1185.6	1185.6	1185.6	1187.2
170°	1195.7	1194.9	1194.1	1193.3	1192.5	1192.1	1192.1	1192.1	1192.1	1192.1	1193.6
172.5°	1200.0	1199.0	1198.1	1197.1	1196.1	1195.8	1195.9	1196.1	1196.2	1196.4	1198.0
175°	1205.5	1204.5	1203.5	1202.6	1201.6	1201.1	1201.3	1201.6	1201.8	1201.9	1203.4
177.5°	1206.9	1206.1	1205.4	1204.6	1203.8	1203.5	1203.6	1203.8	1203.9	1204.1	1205.4
180°	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7
2.5°	1284.0	1286.0	1288.0	1288.9	1288.6	1288.3	1288.1	1287.9
5°	1281.9	1284.4	1286.9	1288.0	1287.7	1287.4	1287.1	1286.7
7.5°	1274.2	1277.3	1280.4	1281.8	1281.4	1281.0	1280.7	1280.3
10°	1266.3	1269.4	1272.6	1273.8	1273.2	1272.6	1271.9	1271.3
12.5°	1255.8	1258.6	1261.5	1262.6	1261.9	1261.3	1260.7	1260.1
15°	1235.5	1238.6	1241.7	1243.1	1242.9	1242.5	1242.2	1241.9
17.5°	1209.1	1211.9	1214.7	1215.8	1215.5	1215.0	1214.6	1214.2
20°	1190.0	1192.8	1195.6	1197.2	1197.5	1197.8	1198.1	1198.5
22.5°	1169.1	1172.7	1176.2	1177.9	1177.7	1177.5	1177.3	1177.1
25°	1133.6	1137.7	1141.7	1143.8	1143.8	1143.8	1143.8	1143.8
27.5°	1096.6	1100.1	1103.6	1105.5	1105.7	1106.0	1106.3	1106.5
30°	1071.4	1075.1	1078.8	1080.7	1080.7	1080.7	1080.7	1080.7
32.5°	1043.8	1047.8	1051.8	1054.2	1054.9	1055.7	1056.4	1057.1
35°	1003.2	1007.8	1012.4	1015.5	1016.7	1018.0	1019.2	1020.4
37.5°	960.9	966.3	971.5	974.6	975.7	976.7	977.7	978.7
40°	932.9	938.2	943.5	946.7	948.0	949.2	950.5	951.7
42.5°	903.7	909.5	915.3	919.0	920.7	922.5	924.2	926.0
45°	859.9	865.8	871.7	875.9	878.4	880.9	883.4	885.8
47.5°	815.6	822.3	829.0	833.3	835.2	837.1	839.1	841.0
50°	785.2	792.5	799.6	804.2	806.5	808.6	810.8	813.0
52.5°	754.4	761.8	769.2	774.3	776.9	779.6	782.3	785.0
55°	707.8	716.2	724.7	730.1	732.6	735.1	737.6	740.1
57.5°	660.3	668.8	677.3	683.0	685.9	688.8	691.8	694.6
60°	627.1	635.9	644.6	650.7	654.2	657.5	660.9	664.4
62.5°	595.8	604.5	613.2	619.2	622.3	625.5	628.7	631.9
65°	545.7	555.1	564.5	570.6	573.7	576.8	580.0	583.1
67.5°	495.9	506.1	516.3	522.7	525.4	528.0	530.6	533.2
70°	462.9	472.9	482.8	489.4	492.5	495.6	498.6	501.8
72.5°	429.7	440.0	450.1	456.8	459.9	463.1	466.2	469.3
75°	379.4	389.7	399.9	407.0	410.7	414.5	418.2	421.9
77.5°	332.3	343.1	354.0	360.8	363.7	366.6	369.4	372.3
80°	301.5	312.1	322.7	329.6	332.7	335.8	338.9	342.0
82.5°	273.5	284.1	294.6	301.5	304.6	307.7	310.9	314.0
85°	234.3	244.9	255.4	262.3	265.4	268.5	271.6	274.7
87.5°	204.4	215.1	225.9	232.8	236.0	239.2	242.5	245.7
90°	202.7	214.0	225.4	232.9	236.4	239.9	243.4	246.9
92.5°	195.6	207.2	218.8	226.1	229.3	232.4	235.5	238.6
95°	188.6	199.7	210.7	217.8	221.0	224.0	227.1	230.2
97.5°	179.2	190.1	201.0	208.1	211.4	214.7	218.0	221.3
100°	172.7	183.3	194.0	201.0	204.3	207.6	210.9	214.2
102.5°	181.8	185.7	189.6	193.2	196.7	200.2	203.7	207.1
105°	248.3	221.8	195.3	183.6	186.8	190.0	193.2	196.4
107.5°	419.8	402.3	384.9	364.3	340.5	316.6	292.8	269.0
110°	496.7	498.2	499.8	487.6	461.5	435.6	409.7	383.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	548.0	556.0	563.9	566.2	563.0	559.7	556.4	553.2
115°	607.3	616.8	626.2	632.7	635.9	639.2	642.5	645.8
117.5°	659.6	668.6	677.6	683.4	686.0	688.7	691.3	693.8
120°	694.4	703.1	711.9	717.4	719.5	721.8	723.9	726.1
122.5°	728.2	736.2	744.2	749.4	751.7	754.1	756.4	758.8
125°	775.3	782.2	789.2	793.9	796.5	799.1	801.6	804.2
127.5°	822.4	829.3	836.1	840.3	842.0	843.7	845.5	847.2
130°	850.3	857.0	863.8	867.9	869.3	870.8	872.3	873.8
132.5°	876.5	883.0	889.4	893.4	895.0	896.5	898.1	899.6
135°	916.8	923.0	929.3	932.8	933.8	934.7	935.7	936.7
137.5°	952.3	958.1	964.0	967.5	968.7	969.8	971.0	972.1
140°	974.9	980.3	985.8	989.1	990.2	991.4	992.6	993.7
142.5°	995.6	1000.4	1005.2	1008.1	1009.1	1010.1	1011.1	1012.1
145°	1027.7	1030.6	1033.5	1035.5	1036.8	1038.0	1039.3	1040.5
147.5°	1057.0	1058.1	1059.3	1060.0	1060.2	1060.3	1060.6	1060.8
150°	1075.6	1075.9	1076.4	1076.6	1076.6	1076.7	1076.7	1076.7
152.5°	1093.4	1094.1	1094.8	1094.8	1094.0	1093.2	1092.4	1091.6
155°	1117.9	1118.9	1120.0	1119.8	1118.7	1117.5	1116.2	1115.1
157.5°	1139.3	1140.5	1141.7	1141.5	1140.0	1138.4	1136.8	1135.3
160°	1151.5	1152.7	1153.9	1153.8	1152.4	1151.0	1149.6	1148.2
162.5°	1162.5	1164.0	1165.3	1165.3	1164.1	1162.9	1161.6	1160.4
165°	1177.3	1178.9	1180.5	1180.6	1179.3	1177.9	1176.4	1175.1
167.5°	1188.8	1190.4	1192.0	1192.0	1190.4	1188.8	1187.2	1185.6
170°	1195.2	1196.9	1198.5	1198.5	1196.9	1195.2	1193.6	1192.1
172.5°	1199.6	1201.1	1202.7	1202.7	1201.0	1199.2	1197.4	1195.7
175°	1204.7	1206.1	1207.6	1207.5	1205.9	1204.3	1202.7	1201.0
177.5°	1206.7	1207.9	1209.2	1209.1	1207.5	1205.9	1204.3	1202.7
180°	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5

(END OF REPORT)