

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: P332201-840

Luminaire Tested: **S123DIW-S1000D1320U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332201-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S1000D1320U840-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1000 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8864.6 lumens
Efficiency: N/A
Efficacy: 127.0 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

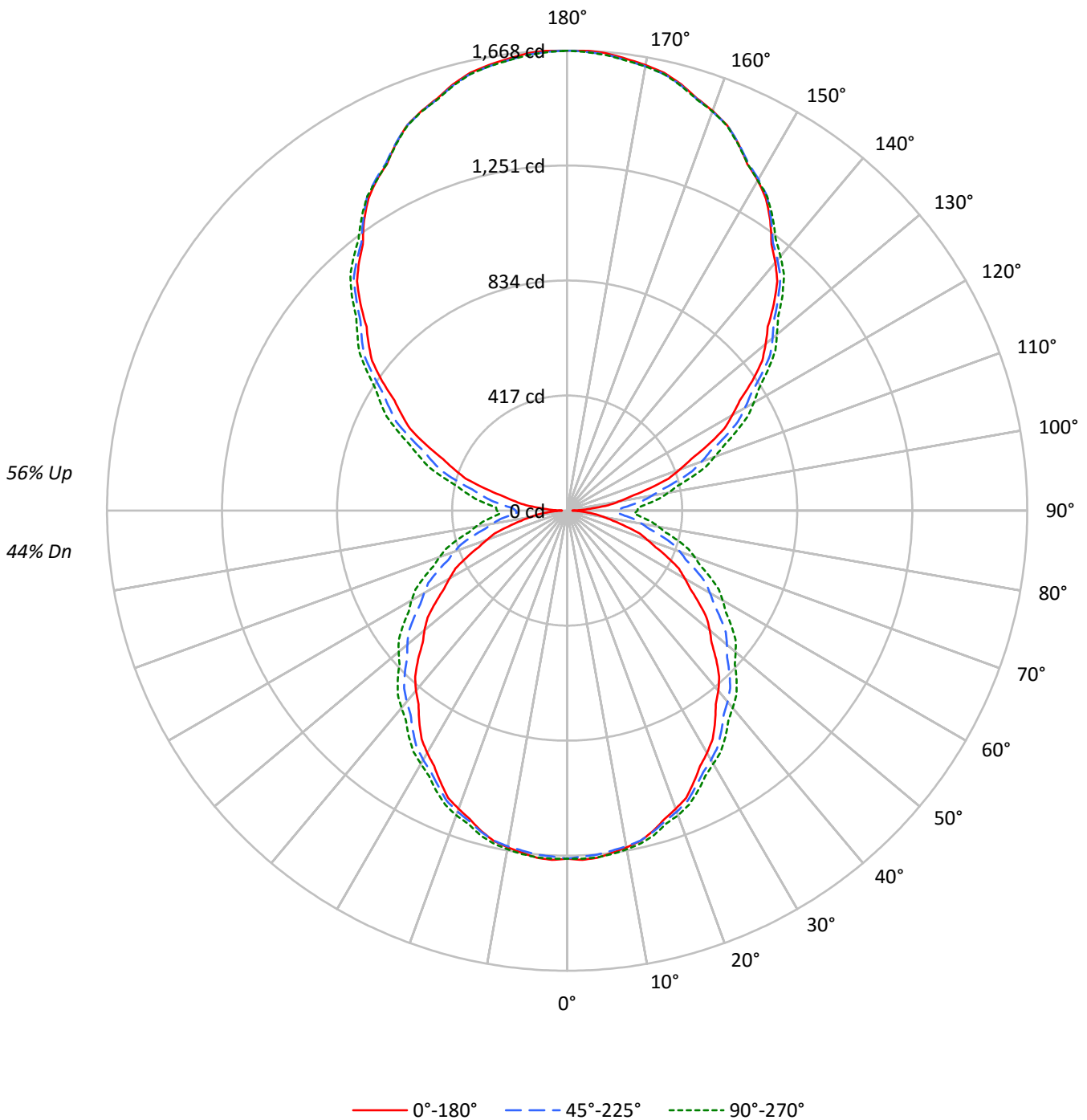
Input Watts (W): 69.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	50	50	50	44				
1	95	91	87	83	87	83	79	76	69	66	64	55	54	52	43	42	41	35				
2	87	79	72	67	79	72	66	62	60	55	52	48	45	43	37	35	34	29				
3	79	69	61	55	72	63	56	51	52	47	43	42	39	36	33	30	28	24				
4	72	61	53	46	65	56	49	43	46	41	37	37	33	30	29	26	24	20				
5	66	54	46	40	60	50	42	37	41	36	31	33	29	26	26	23	21	17				
6	61	48	40	34	55	44	37	32	37	31	27	30	26	23	24	21	18	15				
7	56	43	35	30	51	40	33	28	33	28	24	27	23	20	22	18	16	13				
8	52	39	32	26	47	36	29	24	30	25	21	25	21	18	20	17	14	12				
9	48	36	28	23	44	33	26	22	28	22	19	23	19	16	18	15	13	11				
10	45	33	26	21	41	30	24	19	26	20	17	21	17	14	17	14	12	10				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13581	13581	13581
5°	13623	13239	13246
10°	13501	12935	12870
15°	13327	12588	12458
20°	13078	12192	12005
25°	12772	11738	11529
30°	12457	11328	11046
35°	12104	10895	10660
40°	11767	10501	10247
45°	11396	10122	9918
50°	11028	9750	9554
55°	10621	9366	9226
60°	10225	8977	8892
65°	9818	8564	8493
70°	9204	8097	8084
75°	8432	7563	7667
80°	7539	7041	7193
85°	6723	6680	6917



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.6	1.3
10°-20°	341.0	3.8
20°-30°	510.0	5.8
30°-40°	609.0	6.9
40°-50°	637.2	7.2
50°-60°	598.0	6.7
60°-70°	499.4	5.6
70°-80°	357.3	4.0
80°-90°	218.0	2.5
90°-100°	242.3	2.7
100°-110°	423.4	4.8
110°-120°	618.6	7.0
120°-130°	764.8	8.6
130°-140°	834.3	9.4
140°-150°	807.2	9.1
150°-160°	676.5	7.6
160°-170°	450.3	5.1
170°-180°	157.7	1.8
0°-30°	970.6	10.9
0°-40°	1579.6	17.8
0°-60°	2814.7	31.8
0°-90°	3889.5	43.9
90°-120°	1284.2	14.5
90°-150°	3690.6	41.6
90°-180°	4975.0	56.1
0°-180°	8864.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1262	1262	1262	1262	1262	
5°	1263	1260	1252	1262	1262	120
15°	1203	1206	1205	1218	1218	339
25°	1086	1099	1104	1121	1122	500
35°	935	956	974	994	1001	584
45°	764	797	832	857	869	589
55°	583	628	678	713	726	522
65°	403	457	517	556	572	398
75°	218	283	352	396	414	233
85°	67	136	209	254	269	71
90°	19	100	187	237	255	17
95°	92	156	233	279	295	99
105°	306	343	412	449	466	327
115°	564	585	631	664	675	558
125°	819	825	860	882	888	730
135°	1060	1067	1080	1099	1104	816
145°	1284	1285	1289	1298	1299	801
155°	1468	1468	1470	1474	1466	676
165°	1599	1596	1595	1602	1594	451
175°	1663	1658	1658	1665	1657	158
180°	1667	1667	1667	1667	1667	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7
2.5°	1267.3	1266.6	1265.8	1265.1	1264.4	1262.9	1261.0	1259.1	1257.1	1255.2	1257.1
5°	1263.1	1262.5	1261.9	1261.3	1260.7	1259.5	1257.7	1255.8	1253.9	1252.1	1254.6
7.5°	1250.7	1250.9	1251.0	1251.1	1251.2	1250.4	1248.7	1246.9	1245.1	1243.3	1246.4
10°	1239.8	1240.4	1241.0	1241.6	1242.2	1241.7	1240.2	1238.7	1237.2	1235.7	1238.7
12.5°	1226.6	1227.4	1228.3	1229.1	1230.0	1229.9	1228.9	1227.8	1226.8	1225.8	1228.6
15°	1202.6	1203.6	1204.5	1205.4	1206.3	1206.6	1206.3	1206.0	1205.7	1205.4	1208.5
17.5°	1172.5	1174.3	1176.1	1177.9	1179.7	1180.6	1180.5	1180.3	1180.2	1180.1	1182.9
20°	1150.4	1152.3	1154.1	1155.9	1157.7	1159.0	1159.6	1160.2	1160.8	1161.4	1164.2
22.5°	1127.3	1129.1	1131.0	1132.9	1134.7	1136.0	1136.9	1137.7	1138.6	1139.4	1142.9
25°	1085.8	1088.8	1092.0	1095.0	1098.0	1100.0	1101.0	1101.9	1102.8	1103.7	1107.6
27.5°	1044.0	1047.5	1051.0	1054.5	1057.9	1060.7	1062.7	1064.6	1066.5	1068.5	1072.0
30°	1014.3	1018.3	1022.3	1026.2	1030.3	1033.4	1035.9	1038.3	1040.8	1043.2	1046.9
32.5°	981.4	985.8	990.3	994.7	999.2	1003.0	1006.2	1009.4	1012.6	1015.7	1019.7
35°	934.6	939.5	944.4	949.3	954.2	958.6	962.6	966.5	970.5	974.5	979.1
37.5°	885.1	890.7	896.2	901.6	907.2	912.3	917.3	922.1	927.0	931.9	937.1
40°	852.1	857.7	863.1	868.7	874.1	880.0	886.1	892.2	898.3	904.4	909.6
42.5°	815.9	822.6	829.3	836.1	842.7	849.3	855.7	862.0	868.4	874.7	880.4
45°	764.2	771.5	778.9	786.2	793.6	801.0	808.6	816.3	823.9	831.5	837.4
47.5°	710.0	718.3	726.7	735.0	743.3	751.8	760.5	769.3	778.0	786.8	793.2
50°	674.9	683.4	692.0	700.5	709.0	718.1	727.5	737.0	746.5	756.0	763.0
52.5°	637.4	646.5	655.6	664.6	673.7	683.4	693.9	704.3	714.7	725.2	732.5
55°	582.8	592.9	602.9	613.0	623.1	633.6	644.6	655.6	666.6	677.6	685.9
57.5°	529.5	540.0	550.5	561.0	571.5	582.8	594.8	606.8	618.8	630.9	639.1
60°	492.1	503.0	514.0	525.0	536.0	547.8	560.3	572.9	585.4	597.9	606.4
62.5°	456.9	468.1	479.4	490.6	501.8	514.1	527.4	540.6	553.8	567.1	575.6
65°	402.7	414.7	426.6	438.5	450.4	463.0	476.5	489.9	503.3	516.8	525.9
67.5°	347.7	360.4	373.0	385.7	398.3	411.5	425.2	438.9	452.5	466.3	476.3
70°	309.2	322.3	335.5	348.7	361.8	375.7	390.3	405.1	419.7	434.3	444.1
72.5°	274.1	287.2	300.3	313.5	326.6	340.7	355.9	371.0	386.2	401.3	411.3
75°	218.5	232.9	247.2	261.7	276.0	290.7	306.1	321.3	336.6	351.8	361.9
77.5°	170.2	184.6	199.1	213.6	228.0	243.0	258.4	273.8	289.2	304.6	315.2
80°	136.0	151.1	166.0	181.0	195.9	211.4	227.2	243.2	259.0	274.9	285.3
82.5°	106.3	121.6	136.8	152.0	167.2	182.9	199.0	215.1	231.3	247.4	257.8
85°	67.4	82.6	97.9	113.2	128.5	144.2	160.4	176.5	192.7	208.9	219.3
87.5°	36.9	52.6	68.4	84.2	100.0	116.0	132.4	148.8	165.0	181.4	192.0
90°	19.2	37.1	54.9	72.8	90.7	109.3	128.7	148.0	167.4	186.7	198.3
92.5°	48.5	63.9	79.4	94.9	110.4	126.8	144.3	161.9	179.4	196.8	207.9
95°	92.4	106.3	120.3	134.2	148.1	163.8	181.1	198.4	215.7	233.0	243.6
97.5°	150.8	163.0	175.3	187.5	199.8	213.9	229.9	245.9	261.9	277.8	288.3
100°	190.5	202.0	213.6	225.1	236.6	250.1	265.6	281.1	296.6	312.1	321.8
102.5°	236.5	246.4	256.2	266.1	275.9	288.7	304.5	320.1	335.9	351.6	361.1
105°	305.7	313.6	321.5	329.4	337.3	349.2	365.0	380.7	396.5	412.2	420.7
107.5°	384.8	391.3	397.9	404.5	411.0	421.1	434.6	448.1	461.6	475.1	484.2
110°	433.9	440.0	446.1	452.1	458.3	467.7	480.5	493.3	506.0	518.9	528.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	486.4	491.2	496.0	500.9	505.8	514.1	526.0	537.9	549.7	561.5	570.7
115°	563.5	568.0	572.6	577.1	581.7	589.2	599.6	610.0	620.4	630.8	638.4
117.5°	642.4	645.2	648.0	650.9	653.7	659.9	669.5	679.0	688.6	698.2	705.4
120°	690.5	693.8	697.0	700.3	703.6	709.5	718.2	726.8	735.4	744.1	750.7
122.5°	741.8	744.0	746.0	748.1	750.1	755.6	764.5	773.3	782.1	790.9	797.0
125°	818.8	819.7	820.5	821.4	822.3	826.9	835.2	843.4	851.7	860.0	865.3
127.5°	891.1	892.6	894.2	895.8	897.4	901.4	908.2	914.8	921.5	928.2	932.6
130°	939.3	941.3	943.3	945.3	947.4	951.0	956.2	961.5	966.7	972.0	976.6
132.5°	986.4	988.7	991.0	993.2	995.4	998.8	1003.0	1007.2	1011.5	1015.7	1019.9
135°	1059.8	1061.2	1062.6	1064.1	1065.5	1067.7	1070.9	1073.9	1076.9	1080.1	1084.4
137.5°	1127.6	1128.8	1130.0	1131.3	1132.4	1134.4	1137.0	1139.6	1142.3	1145.0	1148.5
140°	1173.7	1175.1	1176.5	1178.0	1179.4	1180.7	1181.9	1183.2	1184.4	1185.6	1189.9
142.5°	1216.6	1217.8	1219.0	1220.2	1221.4	1222.3	1223.0	1223.8	1224.5	1225.2	1229.0
145°	1283.6	1283.9	1284.1	1284.4	1284.8	1285.4	1286.2	1287.1	1288.0	1288.8	1291.0
147.5°	1340.9	1342.0	1343.0	1344.1	1345.1	1346.0	1346.9	1347.7	1348.5	1349.3	1350.1
150°	1381.8	1382.4	1383.0	1383.5	1384.1	1384.7	1385.3	1385.8	1386.4	1387.0	1387.0
152.5°	1415.3	1416.1	1416.9	1417.7	1418.6	1419.2	1419.6	1419.9	1420.3	1420.6	1421.1
155°	1468.2	1468.2	1468.2	1468.2	1468.2	1468.4	1468.6	1468.9	1469.3	1469.6	1470.8
157.5°	1513.3	1513.0	1512.6	1512.3	1511.9	1511.9	1512.1	1512.3	1512.6	1512.8	1514.0
160°	1541.6	1541.1	1540.4	1539.8	1539.2	1538.9	1538.9	1538.9	1538.9	1538.9	1540.4
162.5°	1566.7	1565.9	1565.1	1564.3	1563.5	1563.2	1563.5	1563.7	1563.9	1564.1	1565.6
165°	1599.2	1598.3	1597.5	1596.6	1595.8	1595.3	1595.3	1595.3	1595.3	1595.3	1597.0
167.5°	1625.2	1624.0	1622.9	1621.6	1620.5	1620.0	1620.2	1620.5	1620.7	1620.9	1622.8
170°	1639.8	1638.7	1637.5	1636.4	1635.2	1634.6	1634.6	1634.6	1634.6	1634.6	1636.6
172.5°	1651.3	1650.2	1649.0	1647.9	1646.7	1646.1	1646.1	1646.1	1646.1	1646.1	1647.9
175°	1663.4	1662.2	1661.1	1659.9	1658.7	1658.2	1658.2	1658.2	1658.2	1658.2	1659.9
177.5°	1668.4	1667.5	1666.5	1665.6	1664.7	1664.2	1664.2	1664.2	1664.2	1664.2	1665.6
180°	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7	1261.7
2.5°	1259.1	1261.0	1262.9	1263.8	1263.5	1263.3	1263.1	1262.8
5°	1257.0	1259.5	1261.9	1262.9	1262.6	1262.3	1262.0	1261.7
7.5°	1249.4	1252.5	1255.6	1256.9	1256.6	1256.2	1255.8	1255.5
10°	1241.7	1244.8	1247.9	1249.1	1248.5	1247.9	1247.3	1246.7
12.5°	1231.3	1234.2	1237.0	1238.1	1237.5	1236.9	1236.3	1235.7
15°	1211.5	1214.6	1217.6	1219.0	1218.7	1218.4	1218.1	1217.8
17.5°	1185.6	1188.4	1191.1	1192.2	1191.8	1191.4	1191.0	1190.5
20°	1166.9	1169.6	1172.5	1174.0	1174.3	1174.6	1174.9	1175.2
22.5°	1146.4	1149.8	1153.4	1155.0	1154.8	1154.7	1154.5	1154.3
25°	1111.7	1115.6	1119.5	1121.6	1121.6	1121.6	1121.6	1121.6
27.5°	1075.3	1078.7	1082.2	1084.0	1084.3	1084.5	1084.8	1085.0
30°	1050.6	1054.2	1057.8	1059.8	1059.8	1059.8	1059.8	1059.8
32.5°	1023.6	1027.4	1031.4	1033.7	1034.4	1035.1	1035.9	1036.6
35°	983.6	988.3	992.8	995.7	996.9	998.2	999.4	1000.6
37.5°	942.3	947.5	952.7	955.7	956.7	957.7	958.7	959.7
40°	914.7	920.0	925.1	928.4	929.6	930.8	932.0	933.2
42.5°	886.1	891.7	897.5	901.1	902.8	904.5	906.3	908.0
45°	843.1	849.0	854.7	858.9	861.3	863.7	866.3	868.7
47.5°	799.8	806.4	812.8	817.1	819.0	820.9	822.7	824.7
50°	770.0	777.0	784.1	788.6	790.8	792.9	795.1	797.2
52.5°	739.7	747.0	754.3	759.2	761.8	764.5	767.1	769.7
55°	694.1	702.4	710.6	715.9	718.4	720.8	723.3	725.7
57.5°	647.5	655.8	664.1	669.7	672.6	675.4	678.3	681.2
60°	615.0	623.6	632.1	638.0	641.5	644.8	648.1	651.5
62.5°	584.2	592.8	601.3	607.1	610.3	613.4	616.5	619.7
65°	535.1	544.3	553.4	559.6	562.6	565.6	568.8	571.8
67.5°	486.3	496.2	506.2	512.6	515.1	517.8	520.3	522.8
70°	453.8	463.6	473.4	479.9	482.9	485.9	489.0	492.1
72.5°	421.4	431.4	441.4	448.0	451.0	454.0	457.2	460.2
75°	372.0	382.1	392.1	399.1	402.7	406.4	410.0	413.7
77.5°	325.9	336.5	347.1	353.9	356.6	359.4	362.2	365.1
80°	295.7	306.1	316.4	323.2	326.2	329.2	332.3	335.4
82.5°	268.2	278.5	288.9	295.7	298.7	301.7	304.8	307.9
85°	229.6	240.0	250.4	257.2	260.2	263.3	266.3	269.4
87.5°	202.6	213.3	223.9	230.8	233.9	237.1	240.2	243.5
90°	209.8	221.4	233.0	240.5	244.2	247.8	251.5	255.1
92.5°	218.9	230.0	241.1	247.8	250.3	252.8	255.3	257.7
95°	254.3	264.9	275.5	282.4	285.4	288.5	291.5	294.6
97.5°	298.7	309.1	319.6	326.3	329.2	332.1	335.1	338.0
100°	331.5	341.3	351.0	357.7	361.3	365.0	368.6	372.2
102.5°	370.6	380.1	389.6	395.8	398.7	401.6	404.6	407.6
105°	429.3	437.9	446.4	452.3	455.7	459.0	462.3	465.6
107.5°	493.3	502.5	511.6	517.4	519.7	522.0	524.3	526.6
110°	537.0	546.2	555.3	560.8	562.7	564.5	566.3	568.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	579.8	588.9	597.9	603.7	606.3	608.8	611.5	614.0
115°	646.0	653.7	661.3	666.2	668.3	670.4	672.7	674.8
117.5°	712.7	719.8	727.0	731.4	733.0	734.6	736.1	737.7
120°	757.5	764.3	771.0	775.2	776.7	778.2	779.8	781.3
122.5°	802.9	809.0	815.1	818.7	820.0	821.3	822.6	824.0
125°	870.5	875.8	881.0	884.0	885.0	886.1	887.0	888.0
127.5°	937.1	941.5	945.8	948.5	949.2	950.0	950.7	951.4
130°	981.3	985.9	990.5	992.7	992.5	992.3	992.1	991.9
132.5°	1024.0	1028.2	1032.4	1034.7	1035.2	1035.7	1036.2	1036.7
135°	1088.7	1093.1	1097.3	1100.0	1101.0	1101.9	1102.9	1103.8
137.5°	1152.2	1155.8	1159.3	1161.3	1161.7	1162.3	1162.7	1163.1
140°	1194.2	1198.5	1202.7	1204.7	1204.2	1203.7	1203.2	1202.6
142.5°	1232.8	1236.6	1240.4	1242.3	1242.2	1242.2	1242.1	1242.1
145°	1293.1	1295.3	1297.5	1298.5	1298.6	1298.7	1298.7	1298.8
147.5°	1350.8	1351.5	1352.2	1352.3	1351.7	1351.0	1350.4	1349.7
150°	1387.0	1387.0	1387.0	1386.4	1385.3	1384.2	1383.1	1381.9
152.5°	1421.5	1422.0	1422.4	1422.0	1420.6	1419.2	1417.9	1416.4
155°	1471.9	1473.1	1474.2	1473.8	1471.8	1469.8	1467.6	1465.6
157.5°	1515.2	1516.4	1517.7	1517.4	1515.8	1514.2	1512.6	1511.0
160°	1541.9	1543.4	1544.8	1545.0	1543.8	1542.7	1541.5	1540.2
162.5°	1567.0	1568.5	1569.9	1569.7	1567.9	1566.0	1564.2	1562.3
165°	1598.8	1600.5	1602.3	1602.2	1600.1	1598.1	1596.0	1594.0
167.5°	1624.6	1626.4	1628.2	1628.2	1626.4	1624.6	1622.8	1620.9
170°	1638.7	1640.7	1642.7	1642.7	1640.7	1638.7	1636.6	1634.6
172.5°	1649.7	1651.5	1653.4	1653.3	1651.2	1649.1	1647.1	1645.1
175°	1661.6	1663.4	1665.2	1665.0	1662.9	1660.9	1658.9	1656.9
177.5°	1667.0	1668.4	1669.8	1669.7	1668.0	1666.4	1664.8	1663.1
180°	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4	1667.4

(END OF REPORT)