

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: P332231-830

Luminaire Tested: **S123DIW-S1165D1320U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332231-830
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-S1165D1320U830-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 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: 8886.8 lumens
Efficiency: N/A
Efficacy: 116.6 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

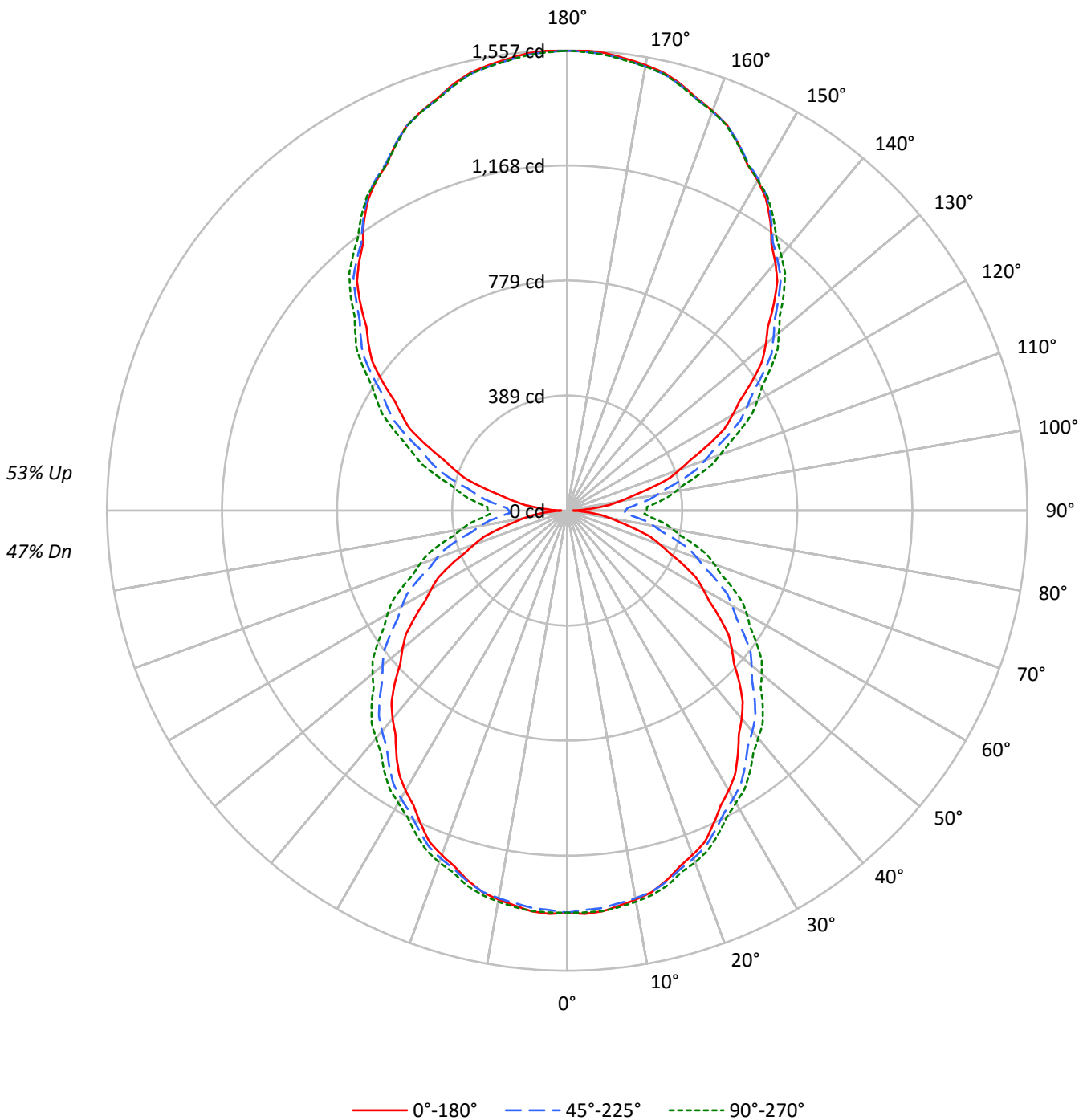
Input Watts (W): 76.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	106	106	106	106	98	98	98	98	82	82	82	67	67	67	54	54	54	47
1	96	91	87	83	88	84	80	77	70	67	65	57	56	54	46	44	43	38
2	87	79	73	67	80	73	67	62	61	57	53	50	47	44	40	38	36	31
3	79	69	62	56	72	64	57	52	53	48	44	44	40	37	35	32	30	26
4	72	61	53	47	66	56	49	44	47	42	37	39	35	31	31	28	25	22
5	66	54	46	40	61	50	43	37	42	36	32	35	30	27	28	25	22	19
6	61	49	40	34	56	45	37	32	38	32	28	31	27	23	25	22	19	16
7	56	44	36	30	51	40	33	28	34	29	24	28	24	21	23	20	17	14
8	52	40	32	26	48	37	30	25	31	26	22	26	22	18	21	18	15	13
9	49	36	29	23	45	34	27	22	29	23	19	24	20	16	19	16	14	11
10	45	33	26	21	42	31	24	20	26	21	17	22	18	15	18	15	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14640	14640	14640
5°	14685	14271	14279
10°	14553	13942	13872
15°	14366	13569	13429
20°	14098	13143	12941
25°	13767	12652	12427
30°	13428	12211	11906
35°	13049	11744	11491
40°	12686	11320	11046
45°	12284	10913	10690
50°	11887	10508	10298
55°	11448	10097	9946
60°	11021	9677	9585
65°	10584	9230	9154
70°	9925	8729	8713
75°	9088	8154	8264
80°	8133	7589	7753
85°	7242	7201	7456



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.9	1.5
10°-20°	367.5	4.1
20°-30°	549.7	6.2
30°-40°	656.5	7.4
40°-50°	686.9	7.7
50°-60°	644.6	7.3
60°-70°	538.3	6.1
70°-80°	385.2	4.3
80°-90°	234.3	2.6
90°-100°	245.5	2.8
100°-110°	409.4	4.6
110°-120°	586.8	6.6
120°-130°	719.3	8.1
130°-140°	781.1	8.8
140°-150°	753.9	8.5
150°-160°	631.4	7.1
160°-170°	420.3	4.7
170°-180°	147.2	1.7
0°-30°	1046.2	11.8
0°-40°	1702.7	19.2
0°-60°	3034.1	34.1
0°-90°	4191.9	47.2
90°-120°	1241.7	14.0
90°-150°	3495.9	39.3
90°-180°	4695.0	52.8
0°-180°	8886.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1360	1360	1360	1360	1360	
5°	1362	1358	1350	1361	1360	129
15°	1296	1300	1299	1313	1313	365
25°	1170	1185	1190	1208	1209	539
35°	1008	1031	1050	1072	1079	630
45°	824	859	896	924	936	635
55°	628	677	730	769	782	562
65°	434	492	557	600	616	429
75°	236	305	379	426	446	252
85°	73	147	225	274	290	76
90°	20	106	197	250	269	18
95°	88	156	237	286	303	94
105°	287	327	400	440	457	307
115°	527	550	599	635	647	522
125°	765	771	809	834	841	682
135°	990	996	1010	1031	1037	762
145°	1198	1199	1203	1213	1215	748
155°	1370	1370	1372	1376	1368	631
165°	1493	1489	1489	1495	1488	421
175°	1553	1548	1548	1554	1546	147
180°	1556	1556	1556	1556	1556	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1
2.5°	1366.0	1365.3	1364.4	1363.7	1362.8	1361.4	1359.3	1357.2	1355.1	1353.0	1355.1
5°	1361.6	1360.9	1360.3	1359.6	1359.0	1357.6	1355.7	1353.7	1351.7	1349.7	1352.4
7.5°	1348.2	1348.4	1348.5	1348.7	1348.8	1347.9	1346.0	1344.1	1342.2	1340.2	1343.5
10°	1336.4	1337.1	1337.8	1338.4	1339.1	1338.5	1336.9	1335.2	1333.6	1331.9	1335.2
12.5°	1322.2	1323.0	1324.0	1324.9	1325.9	1325.8	1324.6	1323.5	1322.4	1321.3	1324.3
15°	1296.4	1297.4	1298.4	1299.4	1300.3	1300.7	1300.3	1300.0	1299.7	1299.4	1302.7
17.5°	1263.8	1265.7	1267.7	1269.7	1271.7	1272.6	1272.5	1272.3	1272.2	1272.1	1275.1
20°	1240.1	1242.1	1244.1	1246.0	1248.0	1249.3	1250.0	1250.7	1251.3	1252.0	1254.9
22.5°	1215.2	1217.2	1219.2	1221.2	1223.1	1224.6	1225.5	1226.4	1227.3	1228.2	1232.0
25°	1170.4	1173.7	1177.0	1180.3	1183.6	1185.7	1186.8	1187.7	1188.7	1189.7	1194.0
27.5°	1125.4	1129.2	1132.9	1136.7	1140.4	1143.4	1145.5	1147.5	1149.7	1151.8	1155.5
30°	1093.4	1097.7	1101.9	1106.3	1110.5	1114.0	1116.6	1119.3	1121.9	1124.5	1128.5
32.5°	1057.8	1062.6	1067.4	1072.2	1077.0	1081.2	1084.6	1088.1	1091.5	1094.9	1099.1
35°	1007.5	1012.8	1018.0	1023.3	1028.6	1033.3	1037.6	1041.9	1046.1	1050.5	1055.4
37.5°	954.1	960.1	966.0	971.9	977.9	983.4	988.7	994.0	999.3	1004.6	1010.1
40°	918.6	924.5	930.5	936.3	942.3	948.6	955.2	961.7	968.3	974.9	980.5
42.5°	879.5	886.7	894.0	901.2	908.4	915.5	922.4	929.2	936.0	942.9	949.0
45°	823.8	831.7	839.5	847.4	855.4	863.5	871.7	879.9	888.2	896.4	902.6
47.5°	765.3	774.3	783.3	792.3	801.3	810.4	819.8	829.2	838.7	848.1	855.1
50°	727.5	736.7	745.9	755.1	764.3	774.0	784.3	794.5	804.6	814.8	822.5
52.5°	687.2	696.9	706.6	716.4	726.1	736.7	747.9	759.1	770.4	781.7	789.6
55°	628.2	639.0	649.9	660.8	671.7	683.0	694.8	706.7	718.6	730.5	739.3
57.5°	570.7	582.0	593.3	604.6	616.0	628.2	641.1	654.1	667.0	680.0	689.0
60°	530.4	542.2	554.1	566.0	577.8	590.5	604.0	617.5	631.0	644.5	653.7
62.5°	492.5	504.6	516.7	528.9	540.9	554.1	568.4	582.7	597.0	611.3	620.5
65°	434.1	447.0	459.8	472.6	485.5	499.2	513.6	528.1	542.6	557.0	566.9
67.5°	374.8	388.5	402.1	415.8	429.3	443.6	458.3	473.1	487.8	502.6	513.3
70°	333.4	347.5	361.7	375.8	390.0	405.0	420.8	436.6	452.4	468.2	478.7
72.5°	295.4	309.6	323.8	337.9	352.0	367.3	383.6	399.9	416.3	432.6	443.5
75°	235.5	251.1	266.6	282.0	297.5	313.4	329.9	346.4	362.8	379.3	390.1
77.5°	183.4	199.1	214.6	230.3	245.8	261.9	278.5	295.1	311.7	328.3	339.8
80°	146.7	162.8	179.0	195.1	211.2	227.8	245.0	262.1	279.2	296.3	307.6
82.5°	114.7	131.1	147.5	163.9	180.2	197.2	214.5	232.0	249.3	266.6	277.9
85°	72.6	89.1	105.6	122.0	138.5	155.4	172.9	190.3	207.7	225.2	236.4
87.5°	39.7	56.6	73.5	90.5	107.4	124.6	142.1	159.7	177.1	194.6	206.0
90°	20.5	39.3	58.2	77.0	95.9	115.5	135.8	156.1	176.4	196.8	209.1
92.5°	47.7	64.1	80.5	96.9	113.3	130.7	149.3	167.8	186.3	204.9	216.7
95°	88.4	103.2	117.9	132.6	147.4	163.9	182.2	200.6	218.9	237.1	248.5
97.5°	142.6	155.6	168.6	181.6	194.6	209.6	226.6	243.6	260.6	277.6	288.6
100°	179.6	191.7	204.0	216.1	228.3	242.6	259.1	275.6	292.1	308.6	319.0
102.5°	222.4	232.9	243.4	253.8	264.3	277.9	294.5	311.1	327.8	344.5	354.6
105°	286.9	295.4	303.8	312.3	320.7	333.2	349.8	366.5	383.0	399.6	408.9
107.5°	360.4	367.5	374.5	381.5	388.6	399.4	413.8	428.1	442.5	456.9	466.7
110°	406.1	412.6	419.1	425.6	432.1	442.1	455.9	469.6	483.3	497.0	506.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	455.1	460.2	465.5	470.7	475.9	484.8	497.6	510.4	523.1	535.8	545.4
115°	527.0	531.7	536.5	541.2	546.0	554.0	565.3	576.6	588.0	599.3	607.5
117.5°	600.5	603.5	606.4	609.4	612.4	619.2	629.5	640.0	650.4	660.8	668.5
120°	645.3	648.6	651.9	655.1	658.4	664.8	674.3	683.8	693.2	702.8	710.1
122.5°	693.1	695.2	697.3	699.4	701.4	707.3	716.9	726.5	736.1	745.7	752.3
125°	764.8	765.6	766.5	767.2	768.1	773.0	782.0	791.0	800.0	809.0	814.8
127.5°	832.3	833.7	835.1	836.5	837.9	842.3	849.6	856.9	864.2	871.5	876.5
130°	877.3	879.1	881.0	882.8	884.7	888.4	894.2	900.0	905.8	911.5	916.7
132.5°	921.1	923.2	925.3	927.4	929.5	932.9	937.5	942.3	946.9	951.6	956.3
135°	989.5	990.8	992.1	993.3	994.7	997.0	1000.3	1003.7	1007.1	1010.4	1015.2
137.5°	1052.7	1053.9	1055.0	1056.0	1057.2	1059.0	1061.8	1064.5	1067.3	1070.1	1074.1
140°	1095.6	1096.9	1098.3	1099.7	1101.0	1102.3	1103.6	1104.8	1106.1	1107.4	1112.0
142.5°	1135.7	1136.8	1137.8	1139.0	1140.1	1140.9	1141.6	1142.4	1143.0	1143.7	1147.8
145°	1198.3	1198.4	1198.7	1198.9	1199.1	1199.7	1200.4	1201.3	1202.1	1202.9	1205.2
147.5°	1251.5	1252.5	1253.5	1254.5	1255.5	1256.3	1257.1	1257.8	1258.6	1259.3	1260.2
150°	1289.7	1290.2	1290.8	1291.3	1291.8	1292.4	1293.0	1293.5	1294.0	1294.6	1294.6
152.5°	1321.0	1321.7	1322.5	1323.2	1324.0	1324.6	1324.9	1325.2	1325.6	1325.9	1326.3
155°	1370.4	1370.4	1370.4	1370.4	1370.4	1370.6	1370.7	1371.0	1371.3	1371.6	1372.7
157.5°	1412.4	1412.1	1411.7	1411.5	1411.1	1411.1	1411.3	1411.5	1411.7	1411.9	1413.1
160°	1438.8	1438.3	1437.8	1437.2	1436.6	1436.3	1436.3	1436.3	1436.3	1436.3	1437.8
162.5°	1462.3	1461.5	1460.8	1460.0	1459.2	1459.0	1459.2	1459.4	1459.6	1459.8	1461.2
165°	1492.6	1491.8	1491.0	1490.2	1489.4	1488.9	1488.9	1488.9	1488.9	1488.9	1490.5
167.5°	1516.8	1515.7	1514.7	1513.5	1512.5	1512.0	1512.2	1512.5	1512.7	1512.9	1514.6
170°	1530.5	1529.5	1528.3	1527.3	1526.2	1525.6	1525.6	1525.6	1525.6	1525.6	1527.5
172.5°	1541.2	1540.2	1539.1	1538.0	1536.9	1536.3	1536.3	1536.3	1536.3	1536.3	1538.0
175°	1552.6	1551.4	1550.4	1549.3	1548.1	1547.7	1547.7	1547.7	1547.7	1547.7	1549.3
177.5°	1557.2	1556.3	1555.4	1554.5	1553.7	1553.2	1553.2	1553.2	1553.2	1553.2	1554.5
180°	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1	1360.1
2.5°	1357.2	1359.3	1361.4	1362.4	1362.1	1361.8	1361.5	1361.3
5°	1355.0	1357.6	1360.3	1361.4	1361.1	1360.7	1360.5	1360.1
7.5°	1346.8	1350.1	1353.4	1354.9	1354.4	1354.1	1353.7	1353.3
10°	1338.5	1341.8	1345.1	1346.4	1345.8	1345.1	1344.4	1343.8
12.5°	1327.4	1330.4	1333.4	1334.5	1333.9	1333.2	1332.6	1331.9
15°	1305.9	1309.2	1312.5	1314.0	1313.7	1313.3	1313.1	1312.7
17.5°	1278.0	1281.0	1283.9	1285.2	1284.8	1284.3	1283.8	1283.4
20°	1257.8	1260.8	1263.8	1265.5	1265.7	1266.1	1266.4	1266.8
22.5°	1235.8	1239.5	1243.2	1245.0	1244.8	1244.6	1244.4	1244.3
25°	1198.3	1202.6	1206.8	1209.0	1209.0	1209.0	1209.0	1209.0
27.5°	1159.1	1162.8	1166.5	1168.5	1168.8	1169.0	1169.3	1169.6
30°	1132.5	1136.4	1140.3	1142.3	1142.3	1142.3	1142.3	1142.3
32.5°	1103.3	1107.6	1111.7	1114.3	1115.0	1115.9	1116.6	1117.4
35°	1060.4	1065.3	1070.2	1073.4	1074.7	1076.0	1077.3	1078.6
37.5°	1015.7	1021.3	1026.9	1030.2	1031.3	1032.4	1033.4	1034.4
40°	986.1	991.6	997.3	1000.7	1002.0	1003.3	1004.7	1006.0
42.5°	955.2	961.3	967.4	971.4	973.2	975.1	976.9	978.7
45°	908.9	915.1	921.4	925.9	928.5	931.1	933.8	936.3
47.5°	862.1	869.2	876.3	880.8	882.8	884.9	886.9	888.9
50°	830.0	837.6	845.2	850.1	852.4	854.7	857.1	859.3
52.5°	797.4	805.2	813.0	818.4	821.2	824.1	826.9	829.7
55°	748.2	757.1	766.0	771.8	774.4	777.0	779.7	782.3
57.5°	698.0	706.9	715.9	721.9	725.0	728.1	731.2	734.2
60°	662.9	672.1	681.4	687.8	691.4	695.0	698.6	702.3
62.5°	629.7	638.9	648.2	654.5	657.8	661.2	664.6	667.9
65°	576.8	586.7	596.6	603.1	606.4	609.7	613.0	616.3
67.5°	524.1	535.0	545.7	552.5	555.3	558.1	560.8	563.6
70°	489.3	499.8	510.3	517.3	520.6	523.9	527.1	530.4
72.5°	454.2	465.1	475.8	482.9	486.2	489.5	492.8	496.1
75°	401.1	411.9	422.7	430.2	434.1	438.1	442.1	445.9
77.5°	351.2	362.7	374.2	381.4	384.5	387.5	390.5	393.5
80°	318.7	329.9	341.1	348.4	351.7	355.0	358.3	361.5
82.5°	289.1	300.3	311.4	318.7	322.0	325.3	328.6	331.9
85°	247.6	258.8	269.9	277.2	280.5	283.8	287.1	290.4
87.5°	217.4	228.8	240.3	247.7	251.1	254.5	257.9	261.3
90°	221.3	233.6	245.9	253.9	257.8	261.6	265.4	269.3
92.5°	228.5	240.3	252.0	259.3	262.0	264.8	267.4	270.1
95°	259.8	271.0	282.3	289.6	292.9	296.1	299.4	302.7
97.5°	299.7	310.8	321.8	328.9	332.2	335.3	338.5	341.7
100°	329.3	339.7	350.1	357.1	361.0	364.9	368.6	372.5
102.5°	364.8	374.8	384.9	391.5	394.7	397.9	401.1	404.3
105°	418.0	427.3	436.5	442.9	446.4	449.9	453.4	456.9
107.5°	476.4	486.1	495.8	501.9	504.4	507.0	509.6	512.2
110°	516.3	525.9	535.6	541.5	543.6	545.6	547.7	549.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	555.1	564.7	574.3	580.4	583.2	586.1	588.8	591.6
115°	615.7	623.8	632.0	637.3	639.6	642.0	644.3	646.7
117.5°	676.4	684.2	691.9	696.7	698.5	700.3	702.1	704.0
120°	717.4	724.7	732.0	736.5	738.3	740.1	741.8	743.6
122.5°	758.9	765.5	772.1	776.3	777.8	779.3	780.9	782.4
125°	820.7	826.5	832.3	835.8	837.1	838.3	839.5	840.7
127.5°	881.5	886.5	891.5	894.5	895.5	896.5	897.5	898.4
130°	921.9	927.1	932.2	934.8	934.9	935.0	935.1	935.1
132.5°	960.9	965.6	970.3	973.1	973.8	974.6	975.3	976.2
135°	1020.1	1024.9	1029.7	1032.7	1033.9	1034.9	1036.0	1037.2
137.5°	1078.2	1082.2	1086.3	1088.6	1089.2	1089.9	1090.4	1091.1
140°	1116.7	1121.3	1126.1	1128.2	1127.9	1127.8	1127.5	1127.2
142.5°	1152.0	1156.1	1160.3	1162.4	1162.6	1162.8	1162.9	1163.1
145°	1207.6	1209.9	1212.4	1213.6	1213.9	1214.1	1214.4	1214.6
147.5°	1260.9	1261.8	1262.5	1262.7	1262.3	1261.8	1261.4	1260.9
150°	1294.6	1294.6	1294.6	1294.1	1293.2	1292.1	1291.2	1290.2
152.5°	1326.7	1327.2	1327.6	1327.2	1325.9	1324.6	1323.3	1322.1
155°	1373.8	1374.9	1375.9	1375.5	1373.7	1371.8	1369.8	1367.9
157.5°	1414.2	1415.3	1416.5	1416.3	1414.8	1413.2	1411.7	1410.2
160°	1439.1	1440.5	1441.8	1442.0	1440.9	1439.8	1438.7	1437.6
162.5°	1462.5	1464.0	1465.3	1465.1	1463.4	1461.6	1459.9	1458.1
165°	1492.2	1493.8	1495.4	1495.3	1493.5	1491.6	1489.6	1487.7
167.5°	1516.3	1518.0	1519.7	1519.7	1518.0	1516.3	1514.6	1512.9
170°	1529.5	1531.3	1533.2	1533.2	1531.3	1529.5	1527.5	1525.6
172.5°	1539.7	1541.4	1543.1	1543.0	1541.2	1539.2	1537.3	1535.4
175°	1550.9	1552.6	1554.2	1554.0	1552.1	1550.2	1548.3	1546.4
177.5°	1555.9	1557.2	1558.5	1558.4	1556.8	1555.3	1553.8	1552.3
180°	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2

(END OF REPORT)