

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: P332231-940

Luminaire Tested: **S123DIW-S1165D1320U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332231-940
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-S1165D1320U940-4F0-1E-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: 8407.5 lumens
Efficiency: N/A
Efficacy: 110.3 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

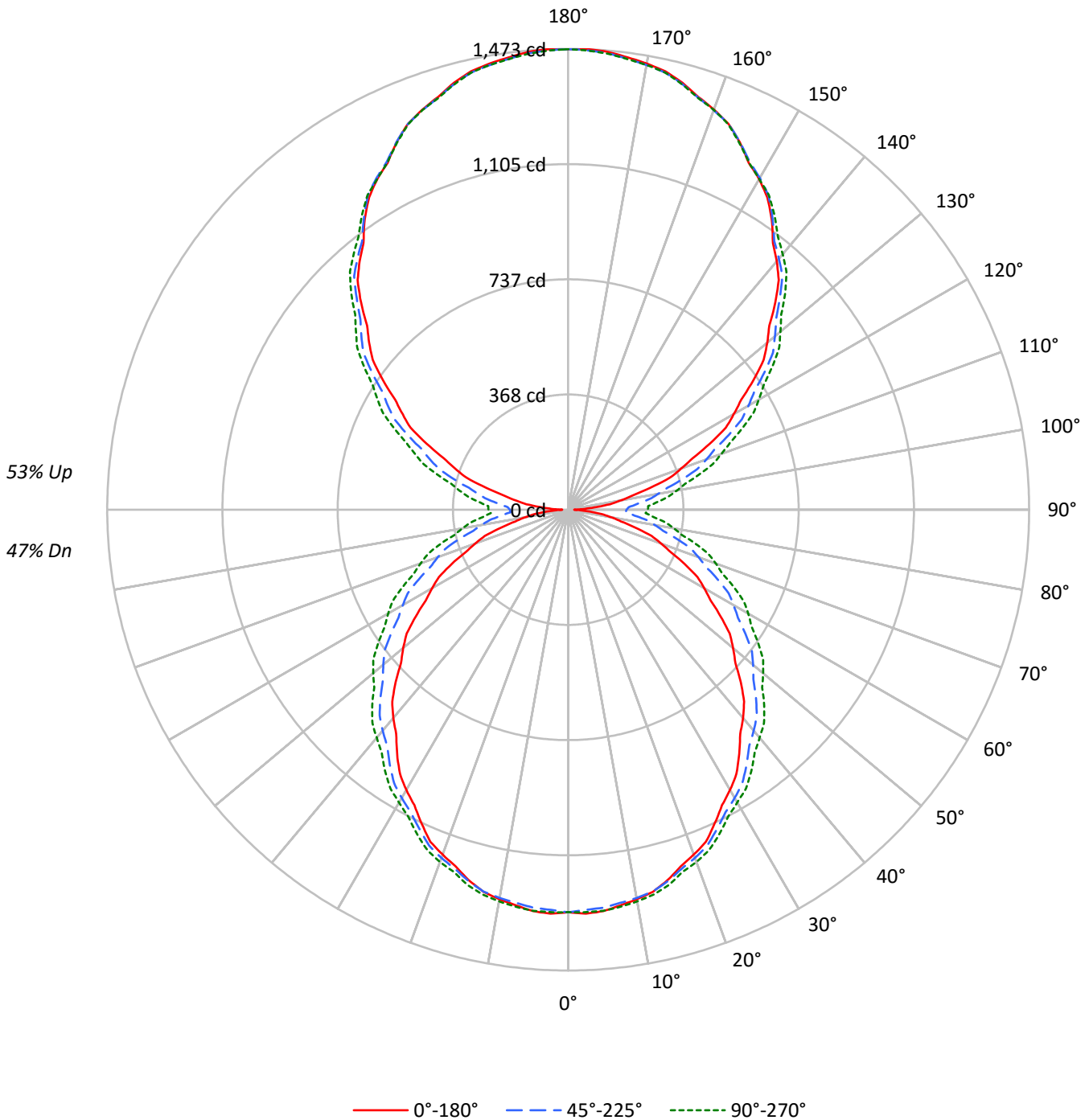
Input Watts (W): 76.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	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	4.1
20°-30°	520.1	6.2
30°-40°	621.1	7.4
40°-50°	649.8	7.7
50°-60°	609.8	7.3
60°-70°	509.3	6.1
70°-80°	364.4	4.3
80°-90°	221.7	2.6
90°-100°	232.3	2.8
100°-110°	387.3	4.6
110°-120°	555.2	6.6
120°-130°	680.5	8.1
130°-140°	739.0	8.8
140°-150°	713.2	8.5
150°-160°	597.4	7.1
160°-170°	397.6	4.7
170°-180°	139.2	1.7
0°-30°	989.8	11.8
0°-40°	1610.9	19.2
0°-60°	2870.5	34.1
0°-90°	3965.9	47.2
90°-120°	1174.7	14.0
90°-150°	3307.4	39.3
90°-180°	4442.0	52.8
0°-180°	8407.5	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	100	186	236	255	17
95°	84	147	224	271	286	89
105°	271	309	378	416	432	290
115°	499	520	567	600	612	493
125°	724	729	765	789	795	645
135°	936	942	956	976	981	721
145°	1134	1135	1138	1148	1149	707
155°	1296	1297	1298	1302	1294	597
165°	1412	1409	1409	1415	1408	398
175°	1469	1464	1464	1470	1463	139
180°	1472	1472	1472	1472	1472	



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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	53.5	69.6	85.6	101.7	117.9	134.5	151.1	167.6	184.1	194.9
90°	19.4	37.2	55.0	72.9	90.7	109.2	128.5	147.7	166.9	186.2	197.8
92.5°	45.1	60.6	76.2	91.7	107.2	123.7	141.2	158.7	176.3	193.9	205.0
95°	83.6	97.6	111.6	125.5	139.5	155.1	172.4	189.8	207.1	224.4	235.1
97.5°	134.9	147.2	159.5	171.8	184.1	198.3	214.4	230.5	246.6	262.6	273.0
100°	169.9	181.4	193.0	204.5	216.0	229.5	245.1	260.7	276.3	291.9	301.8
102.5°	210.4	220.3	230.2	240.1	250.0	262.9	278.6	294.4	310.1	325.9	335.5
105°	271.4	279.5	287.4	295.4	303.4	315.2	330.9	346.7	362.4	378.1	386.8
107.5°	341.0	347.7	354.3	361.0	367.7	377.8	391.5	405.0	418.7	432.3	441.5
110°	384.2	390.4	396.5	402.6	408.8	418.3	431.3	444.3	457.3	470.2	479.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	430.5	435.4	440.4	445.3	450.2	458.7	470.7	482.9	494.9	506.9	516.0
115°	498.6	503.0	507.6	512.0	516.6	524.1	534.8	545.5	556.2	566.9	574.7
117.5°	568.1	571.0	573.7	576.6	579.3	585.8	595.6	605.5	615.3	625.2	632.5
120°	610.5	613.6	616.7	619.7	622.9	628.9	637.9	646.9	655.9	664.9	671.8
122.5°	655.8	657.7	659.7	661.6	663.6	669.1	678.2	687.3	696.4	705.5	711.8
125°	723.5	724.3	725.1	725.9	726.7	731.3	739.9	748.3	756.9	765.4	770.9
127.5°	787.4	788.7	790.1	791.4	792.7	796.8	803.8	810.7	817.6	824.5	829.2
130°	830.0	831.7	833.5	835.2	837.0	840.5	846.0	851.5	856.9	862.4	867.3
132.5°	871.4	873.4	875.4	877.4	879.4	882.6	887.0	891.4	895.8	900.3	904.7
135°	936.1	937.4	938.6	939.8	941.0	943.3	946.4	949.6	952.8	955.9	960.5
137.5°	996.0	997.0	998.1	999.1	1000.1	1001.9	1004.5	1007.1	1009.8	1012.4	1016.2
140°	1036.5	1037.8	1039.0	1040.4	1041.6	1042.9	1044.1	1045.3	1046.4	1047.7	1052.0
142.5°	1074.4	1075.5	1076.5	1077.5	1078.6	1079.4	1080.0	1080.8	1081.4	1082.0	1085.9
145°	1133.6	1133.8	1134.1	1134.3	1134.4	1135.0	1135.7	1136.5	1137.3	1138.0	1140.2
147.5°	1184.0	1185.0	1185.9	1186.9	1187.8	1188.6	1189.3	1190.0	1190.7	1191.4	1192.2
150°	1220.1	1220.7	1221.2	1221.6	1222.2	1222.7	1223.2	1223.7	1224.2	1224.8	1224.8
152.5°	1249.7	1250.4	1251.2	1251.9	1252.6	1253.1	1253.5	1253.7	1254.1	1254.4	1254.8
155°	1296.5	1296.5	1296.5	1296.5	1296.5	1296.6	1296.8	1297.1	1297.4	1297.6	1298.7
157.5°	1336.2	1336.0	1335.6	1335.3	1335.0	1335.0	1335.2	1335.3	1335.6	1335.8	1336.9
160°	1361.2	1360.8	1360.2	1359.7	1359.1	1358.9	1358.9	1358.9	1358.9	1358.9	1360.2
162.5°	1383.4	1382.7	1382.0	1381.3	1380.5	1380.3	1380.5	1380.7	1380.9	1381.1	1382.4
165°	1412.1	1411.3	1410.6	1409.8	1409.1	1408.6	1408.6	1408.6	1408.6	1408.6	1410.2
167.5°	1435.0	1434.0	1433.0	1431.9	1430.9	1430.5	1430.7	1430.9	1431.1	1431.3	1432.9
170°	1448.0	1447.0	1445.9	1444.9	1443.9	1443.3	1443.3	1443.3	1443.3	1443.3	1445.1
172.5°	1458.1	1457.1	1456.1	1455.1	1454.0	1453.5	1453.5	1453.5	1453.5	1453.5	1455.1
175°	1468.8	1467.8	1466.8	1465.7	1464.6	1464.2	1464.2	1464.2	1464.2	1464.2	1465.7
177.5°	1473.2	1472.4	1471.5	1470.7	1469.9	1469.5	1469.5	1469.5	1469.5	1469.5	1470.7
180°	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3



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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°	205.7	216.5	227.3	234.3	237.6	240.8	244.0	247.2
90°	209.4	221.0	232.6	240.2	243.9	247.5	251.1	254.8
92.5°	216.2	227.3	238.4	245.3	247.9	250.5	253.0	255.6
95°	245.8	256.4	267.1	274.0	277.1	280.2	283.3	286.4
97.5°	283.6	294.0	304.4	311.2	314.2	317.2	320.2	323.2
100°	311.6	321.4	331.2	337.9	341.5	345.2	348.7	352.4
102.5°	345.1	354.6	364.2	370.4	373.4	376.5	379.5	382.5
105°	395.5	404.2	413.0	419.0	422.3	425.6	428.9	432.2
107.5°	450.7	459.9	469.0	474.8	477.2	479.7	482.1	484.6
110°	488.5	497.6	506.7	512.3	514.2	516.2	518.2	520.1



TEST NUMBER: P332231-940

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	525.1	534.2	543.3	549.1	551.8	554.5	557.1	559.7
115°	582.5	590.1	597.9	602.9	605.1	607.3	609.6	611.8
117.5°	639.9	647.3	654.6	659.2	660.8	662.5	664.2	666.0
120°	678.7	685.6	692.5	696.8	698.5	700.2	701.8	703.5
122.5°	718.0	724.2	730.5	734.4	735.8	737.3	738.8	740.2
125°	776.4	781.9	787.4	790.8	791.9	793.1	794.2	795.4
127.5°	833.9	838.7	843.4	846.2	847.2	848.1	849.1	850.0
130°	872.2	877.1	881.9	884.4	884.5	884.6	884.7	884.7
132.5°	909.1	913.6	918.0	920.6	921.3	922.0	922.7	923.5
135°	965.1	969.6	974.2	977.0	978.1	979.1	980.2	981.2
137.5°	1020.0	1023.9	1027.7	1029.9	1030.5	1031.1	1031.6	1032.2
140°	1056.5	1060.9	1065.3	1067.4	1067.1	1066.9	1066.7	1066.4
142.5°	1089.8	1093.8	1097.7	1099.7	1099.9	1100.1	1100.2	1100.4
145°	1142.5	1144.7	1147.0	1148.2	1148.4	1148.6	1148.9	1149.1
147.5°	1192.9	1193.7	1194.4	1194.6	1194.2	1193.7	1193.4	1192.9
150°	1224.8	1224.8	1224.8	1224.3	1223.4	1222.4	1221.6	1220.7
152.5°	1255.2	1255.6	1256.0	1255.6	1254.4	1253.2	1252.0	1250.8
155°	1299.7	1300.7	1301.7	1301.4	1299.6	1297.8	1295.9	1294.1
157.5°	1337.9	1339.0	1340.2	1339.9	1338.5	1337.0	1335.6	1334.2
160°	1361.5	1362.8	1364.1	1364.2	1363.2	1362.2	1361.1	1360.0
162.5°	1383.7	1385.0	1386.3	1386.1	1384.5	1382.8	1381.2	1379.5
165°	1411.8	1413.3	1414.8	1414.7	1412.9	1411.1	1409.3	1407.5
167.5°	1434.5	1436.1	1437.7	1437.7	1436.1	1434.5	1432.9	1431.3
170°	1447.0	1448.8	1450.5	1450.5	1448.8	1447.0	1445.1	1443.3
172.5°	1456.7	1458.3	1459.9	1459.8	1458.0	1456.2	1454.4	1452.6
175°	1467.2	1468.8	1470.3	1470.2	1468.4	1466.6	1464.8	1463.0
177.5°	1471.9	1473.2	1474.4	1474.4	1472.8	1471.4	1470.0	1468.6
180°	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3

(END OF REPORT)