

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: P331763-940

Luminaire Tested: **SA2XXRDIP-C1005D1080U940-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331763-940
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-C1005D1080U940-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

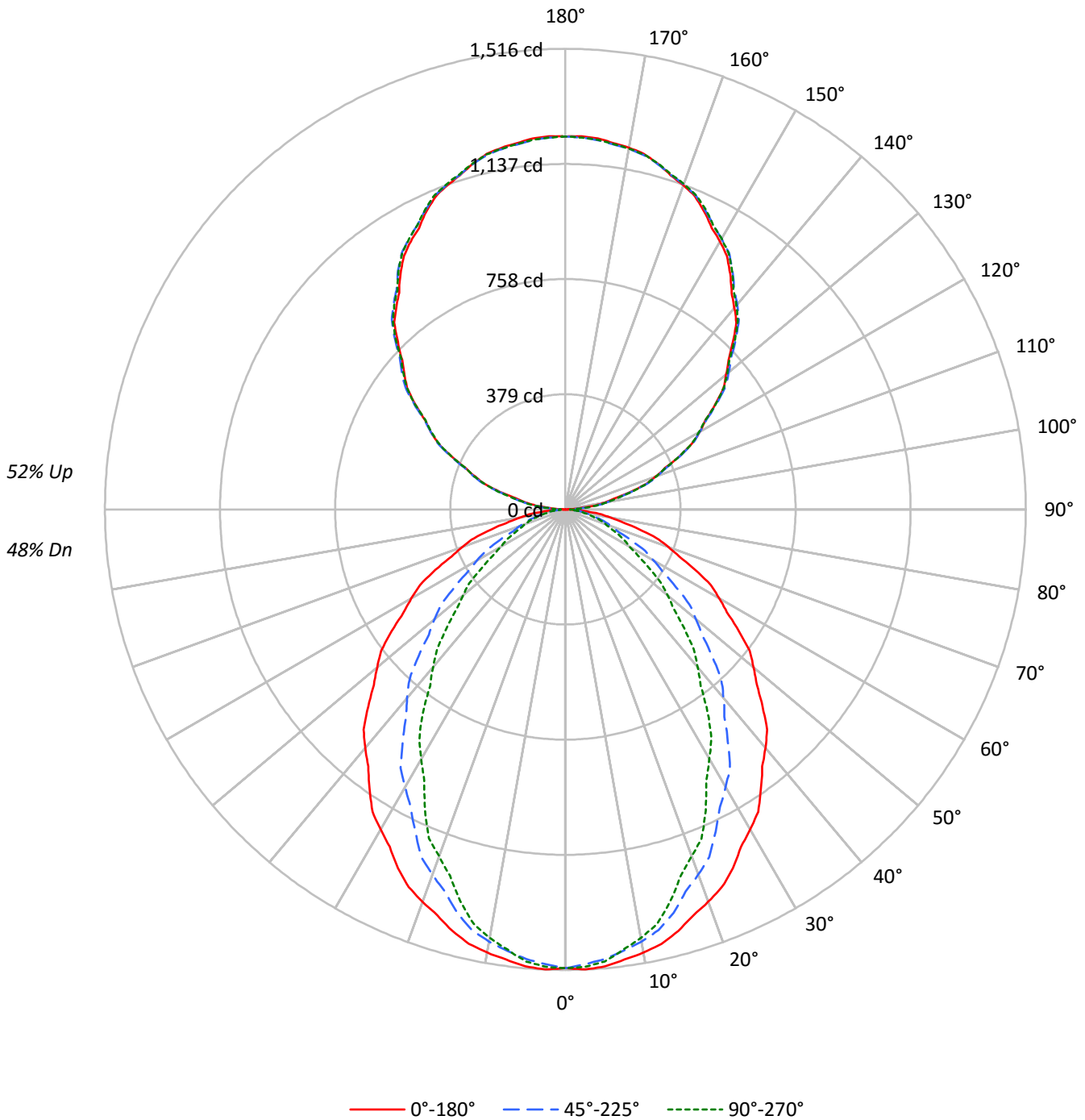
Lumens per Lamp: N/A
Luminaire Lumens: 6542.8 lumens
Efficiency: N/A
Efficacy: 91.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 71.7
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				
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	
RCR																					
0	107	107	107	107	98	98	98	98	82	82	82	67	67	67	54	54	54	48	48	48	48
1	98	94	90	86	90	86	83	80	72	70	68	60	58	57	48	47	46	41	41	41	41
2	89	82	76	71	82	76	71	67	64	60	57	53	51	48	43	41	40	35	35	35	35
3	82	73	66	60	75	67	61	56	57	52	49	47	44	41	39	36	34	30	30	30	30
4	75	65	57	51	69	60	53	48	51	46	42	43	39	36	35	32	30	26	26	26	26
5	69	58	50	44	63	54	47	41	46	40	36	38	34	31	32	29	26	23	23	23	23
6	64	52	44	38	58	48	41	36	41	36	32	35	31	28	29	26	23	21	21	21	21
7	59	47	39	34	54	44	37	32	38	32	28	32	28	25	26	23	21	18	18	18	18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19	17	17	17	17
9	51	39	32	27	47	37	30	26	32	26	23	27	23	20	23	19	17	15	15	15	15
10	48	36	29	24	44	34	27	23	29	24	21	25	21	18	21	18	16	14	14	14	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	24380	24380	24380
5°	24473	24076	24209
10°	24287	23682	23481
15°	24008	22980	22318
20°	23622	21978	20874
25°	23225	20838	19475
30°	22676	19669	17682
35°	22141	18398	16109
40°	21602	17081	14286
45°	20970	15602	12638
50°	20321	14109	11017
55°	19657	12504	9464
60°	18887	10811	7857
65°	18010	9085	7156
70°	16966	7482	6581
75°	15689	6818	6138
80°	13845	6100	5588
85°	10893	4798	4798



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	141.3	2.2
10°-20°	388.1	5.9
20°-30°	545.0	8.3
30°-40°	594.3	9.1
40°-50°	546.4	8.4
50°-60°	429.2	6.6
60°-70°	279.8	4.3
70°-80°	144.3	2.2
80°-90°	42.3	0.6
90°-100°	77.8	1.2
100°-110°	241.6	3.7
110°-120°	412.9	6.3
120°-130°	543.0	8.3
130°-140°	609.4	9.3
140°-150°	597.6	9.1
150°-160°	501.2	7.7
160°-170°	332.4	5.1
170°-180°	116.2	1.8
0°-30°	1074.4	16.4
0°-40°	1668.7	25.5
0°-60°	2644.3	40.4
0°-90°	3110.7	47.5
90°-120°	732.3	11.2
90°-150°	2482.3	37.9
90°-180°	3432.0	52.5
0°-180°	6542.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1510	1510	1510	1510	1510	
5°	1510	1503	1486	1497	1494	143
15°	1436	1419	1375	1350	1335	404
25°	1304	1257	1170	1116	1093	599
35°	1123	1051	933	850	817	703
45°	918	824	683	590	554	709
55°	698	589	444	365	336	624
65°	471	360	238	194	187	467
75°	252	158	109	100	98	266
85°	59	31	26	26	26	69
90°	1	14	36	34	35	5
95°	54	64	66	66	64	62
105°	223	226	228	230	230	235
115°	414	420	418	417	414	410
125°	603	611	609	606	605	538
135°	780	791	793	792	789	602
145°	947	954	960	961	957	591
155°	1082	1086	1089	1093	1091	498
165°	1178	1177	1177	1183	1179	332
175°	1225	1222	1220	1227	1221	116
180°	1227	1227	1227	1227	1227	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0
2.5°	1515.6	1514.3	1513.1	1511.9	1510.6	1508.7	1506.0	1503.4	1500.7	1498.1	1500.5
5°	1510.0	1508.5	1507.0	1505.5	1504.0	1501.3	1497.3	1493.3	1489.4	1485.5	1488.2
7.5°	1494.5	1492.6	1490.8	1488.8	1486.9	1483.7	1479.1	1474.4	1469.9	1465.3	1466.1
10°	1481.4	1479.3	1477.1	1475.0	1472.8	1468.7	1462.7	1456.6	1450.5	1444.5	1443.6
12.5°	1465.0	1462.3	1459.7	1457.1	1454.6	1449.3	1441.5	1433.8	1426.0	1418.3	1416.6
15°	1436.3	1432.9	1429.6	1426.2	1422.9	1416.0	1405.8	1395.4	1385.1	1374.8	1369.0
17.5°	1401.0	1395.9	1390.8	1385.7	1380.6	1371.5	1358.2	1345.0	1331.7	1318.5	1311.6
20°	1374.8	1368.7	1362.6	1356.6	1350.5	1339.9	1324.6	1309.5	1294.3	1279.1	1271.5
22.5°	1346.3	1339.5	1332.8	1326.0	1319.1	1307.2	1290.0	1272.9	1255.8	1238.7	1228.9
25°	1303.7	1294.0	1284.2	1274.5	1264.8	1250.0	1229.9	1209.9	1189.8	1169.7	1157.4
27.5°	1252.3	1241.8	1231.2	1220.7	1210.1	1193.5	1170.9	1148.3	1125.7	1103.1	1088.6
30°	1216.3	1204.7	1193.2	1181.6	1170.1	1152.2	1127.8	1103.6	1079.3	1055.0	1039.5
32.5°	1181.2	1167.8	1154.3	1140.9	1127.3	1108.2	1083.4	1058.6	1033.8	1009.1	991.4
35°	1123.3	1107.9	1092.3	1076.8	1061.4	1040.3	1013.5	986.9	960.1	933.4	914.3
37.5°	1065.4	1048.4	1031.4	1014.3	997.4	974.6	946.1	917.7	889.1	860.7	839.6
40°	1024.9	1006.7	988.5	970.3	952.1	928.2	898.8	869.3	839.8	810.4	788.8
42.5°	983.4	964.2	945.0	925.8	906.6	881.8	851.4	820.9	790.5	760.1	737.8
45°	918.4	898.0	877.6	857.3	837.0	810.8	778.9	747.1	715.2	683.3	661.7
47.5°	854.9	833.4	811.8	790.2	768.7	741.5	708.6	675.6	642.7	609.8	588.4
50°	809.0	787.5	765.9	744.3	722.7	695.3	661.9	628.5	595.0	561.7	540.7
52.5°	764.2	741.6	719.2	696.6	674.0	646.5	613.8	581.1	548.4	515.8	495.5
55°	698.3	674.7	650.9	627.2	603.6	575.3	542.5	509.7	477.0	444.2	425.9
57.5°	630.8	606.5	582.2	557.9	533.6	505.7	474.2	442.6	411.2	379.6	362.9
60°	584.9	560.6	536.3	512.0	487.7	459.9	428.6	397.3	366.0	334.8	319.3
62.5°	540.1	515.8	491.5	467.2	442.9	415.8	386.0	356.1	326.4	296.6	281.8
65°	471.4	446.8	422.3	397.7	373.1	347.1	319.8	292.5	265.1	237.8	227.5
67.5°	405.3	380.9	356.5	332.1	307.6	283.1	258.6	234.0	209.4	184.8	180.0
70°	359.4	335.7	312.0	288.4	264.7	242.4	221.4	200.5	179.5	158.5	155.5
72.5°	315.7	292.9	270.3	247.5	224.8	205.0	188.2	171.4	154.5	137.8	135.2
75°	251.5	230.2	208.9	187.7	166.4	150.6	140.3	130.0	119.7	109.3	107.2
77.5°	188.3	169.7	151.1	132.4	113.7	101.9	96.9	91.9	86.9	82.0	80.8
80°	148.9	133.5	118.0	102.5	87.0	77.8	74.7	71.7	68.7	65.6	64.4
82.5°	112.9	100.8	88.7	76.6	64.6	57.4	55.4	53.3	51.3	49.2	48.5
85°	58.8	52.3	46.0	39.6	33.3	29.6	28.7	27.8	26.8	25.9	25.9
87.5°	17.7	16.3	14.9	13.6	12.1	11.9	12.9	14.0	15.0	16.0	15.7
90°	1.1	3.8	6.6	9.4	12.1	16.0	21.0	26.1	31.2	36.3	35.8
92.5°	18.5	20.4	22.5	24.5	26.6	28.2	29.3	30.6	31.7	32.9	33.0
95°	53.9	56.2	58.5	60.7	63.0	64.5	64.9	65.4	65.8	66.3	66.3
97.5°	98.4	100.4	102.5	104.5	106.5	108.0	108.8	109.7	110.6	111.5	111.5
100°	131.5	133.4	135.3	137.1	138.9	140.2	140.9	141.5	142.2	142.9	142.9
102.5°	166.4	167.8	169.3	170.8	172.3	173.4	174.3	175.1	176.0	176.9	177.1
105°	222.7	223.4	224.1	224.8	225.4	226.0	226.5	226.9	227.4	227.8	228.4
107.5°	279.5	280.4	281.5	282.5	283.5	284.0	284.0	284.0	284.0	284.0	284.2
110°	315.9	317.3	318.7	320.0	321.5	322.2	322.2	322.2	322.2	322.2	322.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	355.7	357.0	358.5	359.8	361.2	361.9	361.6	361.4	361.2	361.1	360.5
115°	414.3	415.7	417.1	418.5	419.8	420.3	419.8	419.4	418.9	418.5	418.2
117.5°	472.7	474.6	476.4	478.2	480.1	480.4	479.1	477.8	476.5	475.2	474.7
120°	511.7	513.5	515.4	517.2	519.1	519.1	517.2	515.4	513.5	511.7	511.7
122.5°	547.3	549.6	551.7	553.9	556.2	556.6	555.4	554.0	552.8	551.4	550.9
125°	602.8	604.9	607.0	609.0	611.1	611.8	611.1	610.5	609.8	609.0	608.3
127.5°	656.9	659.5	662.2	664.8	667.4	668.3	667.4	666.6	665.8	664.9	664.1
130°	690.9	693.8	696.9	699.8	702.8	704.1	703.6	703.2	702.8	702.3	701.8
132.5°	729.0	731.5	733.9	736.3	738.8	740.0	740.1	740.2	740.3	740.4	739.4
135°	780.0	782.5	785.1	787.6	790.1	791.6	792.0	792.5	793.0	793.4	793.2
137.5°	833.6	835.7	837.8	839.8	841.9	843.2	843.8	844.5	845.0	845.6	845.4
140°	865.9	868.0	870.0	872.2	874.2	875.8	877.0	878.2	879.3	880.4	880.4
142.5°	899.1	901.2	903.2	905.3	907.3	908.7	909.5	910.3	911.2	912.0	912.1
145°	946.7	948.3	949.9	951.5	953.1	954.7	956.0	957.4	958.8	960.2	960.4
147.5°	989.2	991.1	993.0	995.0	996.9	998.4	999.3	1000.2	1001.1	1002.0	1002.6
150°	1018.2	1019.6	1020.9	1022.3	1023.7	1024.8	1025.8	1026.7	1027.6	1028.6	1029.2
152.5°	1043.8	1045.3	1046.6	1048.0	1049.4	1050.6	1051.8	1052.8	1054.0	1055.1	1056.0
155°	1082.4	1083.1	1083.8	1084.5	1085.2	1085.8	1086.5	1087.3	1088.0	1088.6	1089.8
157.5°	1115.4	1115.8	1116.2	1116.7	1117.2	1117.6	1118.0	1118.5	1118.8	1119.3	1120.9
160°	1135.2	1135.7	1136.1	1136.6	1137.1	1137.4	1137.6	1137.9	1138.1	1138.4	1139.7
162.5°	1153.4	1153.5	1153.6	1153.7	1153.9	1154.0	1154.2	1154.4	1154.7	1154.9	1156.5
165°	1177.7	1177.5	1177.2	1177.0	1176.8	1176.7	1176.7	1176.7	1176.7	1176.7	1178.3
167.5°	1198.0	1197.3	1196.6	1196.0	1195.2	1194.9	1194.8	1194.8	1194.7	1194.7	1196.3
170°	1208.8	1208.1	1207.4	1206.7	1206.0	1205.6	1205.3	1205.1	1204.9	1204.6	1206.2
172.5°	1216.2	1215.6	1214.9	1214.2	1213.4	1213.0	1212.8	1212.5	1212.3	1212.1	1213.7
175°	1225.4	1224.7	1224.0	1223.2	1222.6	1222.0	1221.6	1221.1	1220.7	1220.1	1221.8
177.5°	1229.0	1228.5	1228.0	1227.4	1226.9	1226.4	1226.0	1225.7	1225.3	1224.9	1226.0
180°	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0	1510.0
2.5°	1502.9	1505.3	1507.8	1508.7	1508.2	1507.8	1507.3	1506.8
5°	1490.9	1493.7	1496.4	1497.3	1496.4	1495.5	1494.6	1493.7
7.5°	1466.8	1467.6	1468.4	1468.0	1466.4	1464.8	1463.3	1461.7
10°	1442.6	1441.7	1440.8	1439.5	1437.6	1435.8	1434.0	1432.2
12.5°	1415.0	1413.3	1411.7	1409.3	1406.3	1403.3	1400.3	1397.2
15°	1363.2	1357.5	1351.7	1347.3	1344.3	1341.2	1338.2	1335.2
17.5°	1304.8	1297.9	1291.0	1285.0	1279.8	1274.5	1269.3	1264.1
20°	1263.9	1256.3	1248.8	1241.6	1234.9	1228.2	1221.6	1214.9
22.5°	1219.1	1209.3	1199.5	1192.1	1187.2	1182.2	1177.2	1172.2
25°	1144.9	1132.5	1120.0	1111.5	1106.9	1102.3	1097.8	1093.2
27.5°	1074.1	1059.5	1045.0	1034.1	1026.9	1019.7	1012.4	1005.2
30°	1024.0	1008.5	993.0	981.2	973.0	964.8	956.6	948.4
32.5°	973.7	956.1	938.3	925.7	918.0	910.3	902.5	894.8
35°	895.1	876.0	856.8	843.9	837.2	830.5	823.9	817.3
37.5°	818.5	797.5	776.3	762.0	754.4	746.7	739.0	731.4
40°	767.2	745.6	724.2	709.4	701.5	693.6	685.7	677.8
42.5°	715.5	693.2	670.9	655.9	648.3	640.6	633.0	625.4
45°	640.2	618.6	597.0	582.6	575.3	568.0	560.7	553.5
47.5°	566.9	545.5	524.0	510.0	503.4	496.8	490.1	483.5
50°	519.8	498.8	477.9	464.1	457.8	451.4	445.1	438.6
52.5°	475.3	455.0	434.9	421.8	415.9	410.0	404.1	398.2
55°	407.7	389.5	371.2	359.3	353.5	347.7	342.0	336.2
57.5°	346.3	329.5	312.8	302.0	297.2	292.3	287.5	282.6
60°	303.8	288.4	272.9	262.7	257.8	253.0	248.1	243.3
62.5°	267.1	252.3	237.6	228.6	225.8	222.8	219.9	217.0
65°	217.1	206.8	196.4	190.8	189.9	189.0	188.2	187.3
67.5°	175.3	170.6	165.8	162.9	162.0	161.0	160.1	159.1
70°	152.5	149.5	146.4	144.3	143.0	141.8	140.6	139.4
72.5°	132.7	130.1	127.5	125.9	125.2	124.5	123.7	123.0
75°	105.0	103.0	100.9	99.6	99.3	99.0	98.7	98.4
77.5°	79.5	78.4	77.1	76.2	75.8	75.3	74.8	74.4
80°	63.1	62.0	60.7	60.1	60.1	60.1	60.1	60.1
82.5°	47.7	47.0	46.3	45.9	45.9	45.9	45.9	45.9
85°	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9
87.5°	15.3	15.0	14.6	14.5	14.5	14.6	14.6	14.7
90°	35.3	34.9	34.4	34.3	34.5	34.8	35.0	35.2
92.5°	33.1	33.2	33.3	33.3	33.4	33.4	33.5	33.5
95°	66.3	66.3	66.3	66.1	65.6	65.2	64.6	64.2
97.5°	111.5	111.5	111.5	111.5	111.4	111.4	111.3	111.3
100°	142.9	142.9	142.9	142.9	142.6	142.4	142.1	141.9
102.5°	177.3	177.5	177.6	177.6	177.4	177.2	176.9	176.7
105°	228.8	229.3	229.7	230.0	230.0	230.0	230.0	230.0
107.5°	284.4	284.5	284.7	284.3	283.3	282.2	281.2	280.1
110°	322.2	322.2	322.2	321.8	321.1	320.4	319.7	319.1



TEST NUMBER: P331763-940

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	360.0	359.4	358.9	358.4	357.8	357.3	356.9	356.3
115°	418.0	417.8	417.5	417.1	416.4	415.7	415.0	414.3
117.5°	474.1	473.6	473.1	472.4	471.7	471.0	470.3	469.7
120°	511.7	511.7	511.7	511.3	510.7	510.0	509.3	508.5
122.5°	550.4	549.8	549.2	548.8	548.2	547.7	547.2	546.7
125°	607.7	607.0	606.3	605.8	605.6	605.4	605.1	604.9
127.5°	663.3	662.5	661.6	660.8	660.1	659.4	658.7	657.9
130°	701.3	700.9	700.4	699.7	698.8	697.9	697.0	696.1
132.5°	738.3	737.4	736.4	735.5	734.8	734.0	733.3	732.5
135°	793.0	792.7	792.5	792.0	791.3	790.7	790.0	789.3
137.5°	845.3	845.1	844.9	844.4	843.4	842.5	841.6	840.6
140°	880.4	880.4	880.4	879.9	879.0	878.2	877.2	876.3
142.5°	912.3	912.5	912.7	912.3	911.3	910.4	909.5	908.6
145°	960.6	960.9	961.1	960.7	959.8	958.9	958.0	957.1
147.5°	1003.1	1003.5	1004.1	1003.9	1003.0	1002.1	1001.2	1000.4
150°	1029.9	1030.6	1031.4	1031.4	1030.6	1029.9	1029.2	1028.6
152.5°	1056.9	1057.7	1058.5	1058.5	1057.7	1056.9	1056.0	1055.1
155°	1090.9	1092.1	1093.2	1093.4	1092.8	1092.1	1091.4	1090.7
157.5°	1122.4	1124.0	1125.5	1125.8	1124.6	1123.6	1122.5	1121.3
160°	1141.1	1142.5	1143.9	1144.1	1143.2	1142.3	1141.3	1140.4
162.5°	1158.1	1159.6	1161.2	1161.4	1160.3	1159.2	1158.1	1157.0
165°	1179.9	1181.5	1183.1	1183.3	1182.2	1181.1	1179.9	1178.8
167.5°	1197.9	1199.5	1201.1	1201.3	1200.2	1198.9	1197.7	1196.6
170°	1207.8	1209.4	1211.0	1211.2	1209.8	1208.4	1207.0	1205.7
172.5°	1215.3	1216.9	1218.5	1218.6	1217.3	1215.8	1214.5	1213.1
175°	1223.4	1225.0	1226.6	1226.7	1225.4	1224.0	1222.6	1221.2
177.5°	1227.2	1228.2	1229.3	1229.3	1228.2	1227.2	1226.0	1224.9
180°	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4

(END OF REPORT)