

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: P331762-935

Luminaire Tested: **SA2XXRDIP-C1005D1080U935-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331762-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C1005D1080U935-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6708.9 lumens
Efficiency: N/A
Efficacy: 93.6 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

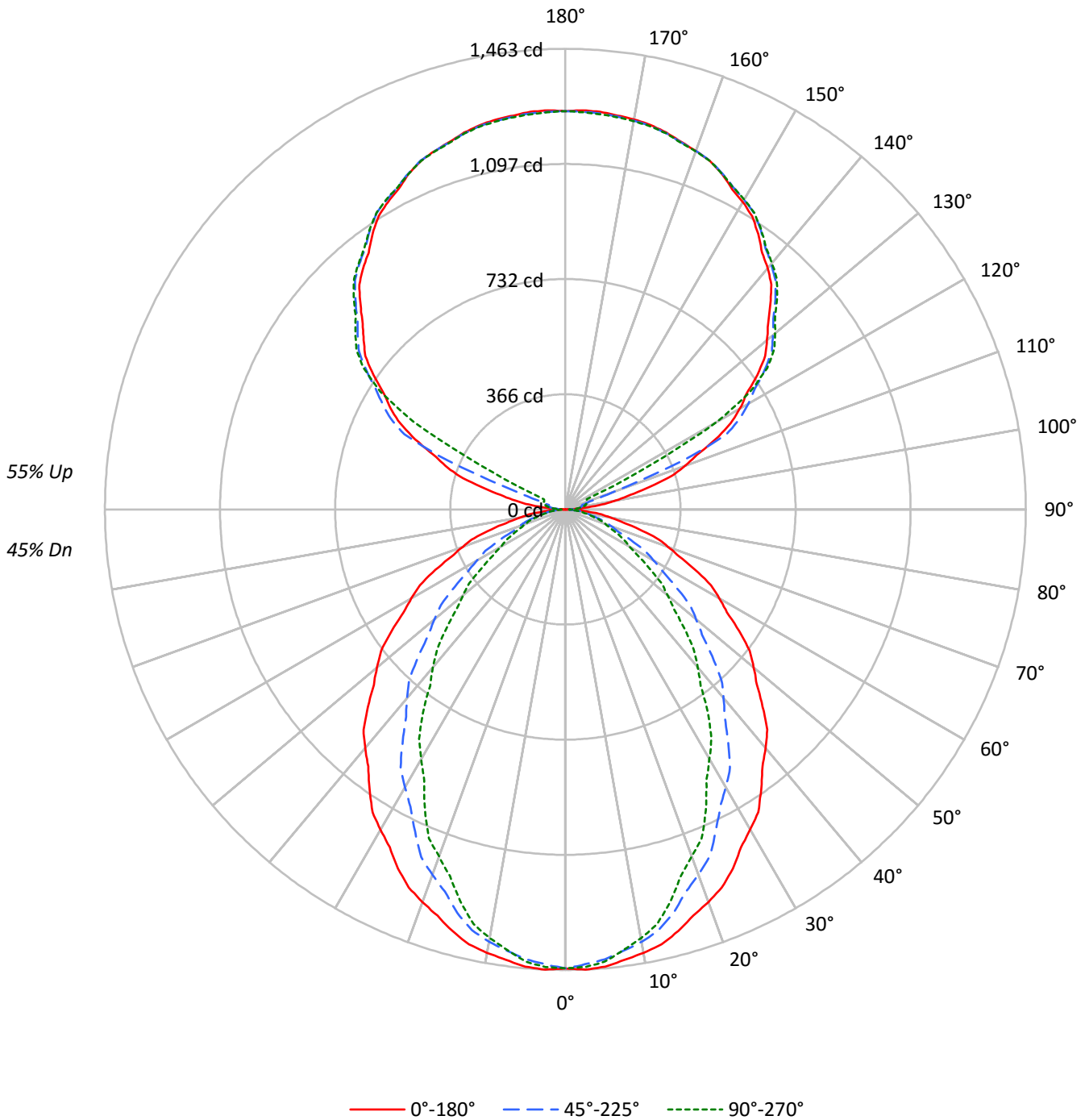
Input Watts (W): 71.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	51	51	51	45				45
1	97	93	89	86	89	85	82	79	71	69	67	58	57	55	46	45	44	39				39
2	89	82	76	71	81	75	70	66	63	59	56	51	49	47	41	39	38	33				33
3	81	72	65	59	74	66	60	55	56	51	48	46	43	40	37	35	33	28				28
4	74	64	56	51	68	59	52	47	50	45	41	41	38	35	33	31	29	25				25
5	68	57	49	44	63	53	46	41	45	40	36	37	33	30	30	27	25	22				22
6	63	51	44	38	58	48	41	36	40	35	31	34	30	27	27	25	22	19				19
7	58	47	39	33	54	43	36	32	37	31	28	31	27	24	25	22	20	17				17
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18	16				16
9	51	39	31	27	46	36	30	25	31	26	22	26	22	19	21	19	16	14				14
10	47	36	29	24	43	33	27	23	28	23	20	24	20	17	20	17	15	13				13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	23541	23541	23541
5°	23631	23246	23376
10°	23451	22866	22673
15°	23181	22188	21549
20°	22807	21220	20155
25°	22425	20122	18805
30°	21895	18990	17074
35°	21378	17763	15554
40°	20858	16493	13793
45°	20247	15066	12202
50°	19623	13622	10638
55°	18978	12073	9137
60°	18235	10440	7585
65°	17391	8772	6907
70°	16386	7227	6354
75°	15147	6588	5926
80°	13371	5895	5393
85°	10504	4650	4650



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.5	2.0
10°-20°	374.7	5.6
20°-30°	526.2	7.8
30°-40°	573.8	8.6
40°-50°	527.6	7.9
50°-60°	414.4	6.2
60°-70°	270.2	4.0
70°-80°	139.3	2.1
80°-90°	39.3	0.6
90°-100°	42.2	0.6
100°-110°	154.7	2.3
110°-120°	413.6	6.2
120°-130°	682.8	10.2
130°-140°	726.1	10.8
140°-150°	674.9	10.1
150°-160°	542.6	8.1
160°-170°	349.7	5.2
170°-180°	120.4	1.8
0°-30°	1037.4	15.5
0°-40°	1611.3	24.0
0°-60°	2553.2	38.1
0°-90°	3002.0	44.7
90°-120°	610.5	9.1
90°-150°	2694.3	40.2
90°-180°	3707.0	55.3
0°-180°	6708.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1458	1458	1458	1458	1458	
5°	1458	1451	1434	1445	1442	138
15°	1387	1371	1327	1303	1289	390
25°	1259	1214	1130	1077	1056	579
35°	1085	1015	901	821	789	678
45°	887	796	660	570	534	684
55°	674	569	429	353	325	602
65°	455	348	230	187	181	451
75°	243	153	106	97	95	257
85°	57	30	25	25	25	67
90°	1	11	18	23	25	5
95°	60	31	36	40	39	73
105°	278	290	56	66	70	297
115°	526	542	565	161	75	518
125°	744	756	773	780	783	663
135°	921	935	944	952	951	711
145°	1068	1068	1083	1089	1085	668
155°	1176	1169	1179	1184	1177	542
165°	1239	1234	1237	1242	1237	350
175°	1268	1262	1263	1269	1260	121
180°	1265	1265	1265	1265	1265	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0
2.5°	1463.4	1462.2	1460.9	1459.8	1458.6	1456.7	1454.1	1451.6	1449.1	1446.5	1448.8
5°	1458.0	1456.6	1455.1	1453.6	1452.2	1449.6	1445.7	1441.9	1438.1	1434.3	1436.9
7.5°	1443.0	1441.2	1439.4	1437.5	1435.7	1432.6	1428.1	1423.7	1419.3	1414.8	1415.6
10°	1430.4	1428.3	1426.2	1424.2	1422.1	1418.2	1412.3	1406.4	1400.6	1394.7	1393.9
12.5°	1414.5	1412.0	1409.5	1407.0	1404.5	1399.4	1391.9	1384.4	1376.9	1369.4	1367.8
15°	1386.8	1383.5	1380.4	1377.1	1373.9	1367.3	1357.4	1347.4	1337.4	1327.4	1321.9
17.5°	1352.7	1347.8	1342.9	1338.0	1333.1	1324.2	1311.4	1298.6	1285.8	1273.1	1266.4
20°	1327.4	1321.5	1315.7	1309.8	1304.0	1293.7	1279.0	1264.4	1249.7	1235.0	1227.7
22.5°	1299.9	1293.4	1286.9	1280.3	1273.7	1262.1	1245.6	1229.1	1212.5	1196.0	1186.5
25°	1258.8	1249.4	1240.0	1230.6	1221.2	1206.9	1187.6	1168.2	1148.8	1129.5	1117.5
27.5°	1209.2	1199.0	1188.8	1178.6	1168.4	1152.4	1130.6	1108.7	1086.9	1065.1	1051.1
30°	1174.4	1163.2	1152.1	1140.9	1129.8	1112.5	1089.0	1065.6	1042.2	1018.6	1003.7
32.5°	1140.6	1127.6	1114.6	1101.6	1088.5	1070.1	1046.1	1022.2	998.2	974.3	957.3
35°	1084.6	1069.7	1054.7	1039.7	1024.8	1004.4	978.6	952.9	927.0	901.2	882.8
37.5°	1028.7	1012.3	995.8	979.4	963.0	941.1	913.5	886.1	858.5	831.0	810.7
40°	989.6	972.1	954.4	936.9	919.3	896.2	867.8	839.4	810.9	782.5	761.6
42.5°	949.5	931.0	912.5	893.9	875.4	851.4	822.1	792.6	763.3	733.9	712.4
45°	886.7	867.0	847.4	827.8	808.1	782.9	752.1	721.3	690.5	659.8	638.9
47.5°	825.4	804.7	783.9	763.0	742.2	715.9	684.2	652.3	620.5	588.8	568.1
50°	781.2	760.3	739.5	718.7	697.8	671.3	639.1	606.8	574.5	542.3	522.1
52.5°	737.9	716.1	694.4	672.6	650.8	624.2	592.6	561.1	529.5	498.0	478.5
55°	674.2	651.4	628.5	605.6	582.8	555.5	523.8	492.1	460.5	428.9	411.2
57.5°	609.1	585.7	562.1	538.7	515.2	488.3	457.9	427.4	397.0	366.5	350.4
60°	564.7	541.3	517.8	494.4	470.9	444.1	413.9	383.7	353.4	323.3	308.3
62.5°	521.5	498.0	474.6	451.1	427.7	401.5	372.7	343.9	315.1	286.4	272.1
65°	455.2	431.4	407.8	384.0	360.2	335.2	308.8	282.4	256.0	229.6	219.6
67.5°	391.3	367.8	344.2	320.6	297.0	273.4	249.7	225.9	202.2	178.4	173.8
70°	347.1	324.2	301.3	278.4	255.5	234.0	213.8	193.6	173.3	153.1	150.2
72.5°	304.8	282.8	261.0	239.0	217.1	197.9	181.8	165.5	149.2	133.0	130.5
75°	242.8	222.2	201.7	181.2	160.7	145.4	135.4	125.5	115.5	105.6	103.5
77.5°	181.8	163.8	145.9	127.9	109.8	98.4	93.6	88.8	83.9	79.2	78.0
80°	143.8	128.9	113.9	98.9	84.0	75.1	72.2	69.2	66.3	63.4	62.2
82.5°	109.0	97.3	85.7	74.0	62.3	55.4	53.5	51.5	49.5	47.5	46.8
85°	56.7	50.5	44.4	38.2	32.1	28.6	27.7	26.9	25.9	25.1	25.1
87.5°	17.0	15.7	14.2	12.7	11.4	10.8	11.1	11.5	11.8	12.1	12.1
90°	0.9	3.2	5.4	7.7	9.9	11.8	13.4	15.1	16.7	18.3	19.3
92.5°	18.5	18.3	18.1	17.9	17.7	18.0	18.8	19.6	20.4	21.3	21.8
95°	59.5	52.8	46.1	39.3	32.6	30.0	31.4	32.9	34.3	35.7	36.7
97.5°	118.0	99.2	80.2	61.3	42.4	34.6	37.9	41.2	44.5	47.8	48.6
100°	162.0	134.1	106.2	78.4	50.5	38.3	41.8	45.3	48.7	52.2	53.8
102.5°	210.3	204.4	198.5	192.6	186.8	169.4	140.4	111.5	82.6	53.6	55.8
105°	278.3	284.4	290.4	296.5	302.6	277.9	222.4	166.9	111.3	55.8	58.0
107.5°	355.7	360.6	365.5	370.4	375.4	344.6	277.9	211.4	144.7	78.2	75.9
110°	405.4	409.7	414.1	418.3	422.6	395.3	336.5	277.8	219.0	160.1	139.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	452.4	456.2	459.9	463.6	467.4	462.1	447.5	433.1	418.5	404.0	329.8
115°	526.3	529.8	533.2	536.7	540.1	544.4	549.5	554.6	559.6	564.7	470.5
117.5°	592.4	596.2	600.1	604.0	607.9	611.5	615.0	618.5	622.0	625.5	602.7
120°	640.7	643.8	646.8	649.9	652.9	656.3	660.0	663.6	667.3	670.9	673.3
122.5°	681.7	684.9	688.1	691.4	694.6	698.2	702.1	706.1	710.2	714.1	715.6
125°	744.2	746.7	749.4	752.1	754.7	757.9	761.8	765.7	769.6	773.4	774.8
127.5°	800.7	803.7	806.6	809.5	812.4	815.3	818.2	821.0	824.0	826.9	829.0
130°	836.5	839.8	843.1	846.4	849.5	852.3	854.5	856.8	859.0	861.3	863.5
132.5°	873.1	876.0	878.7	881.5	884.2	886.7	889.0	891.2	893.5	895.7	897.6
135°	920.8	924.0	927.3	930.6	933.8	936.3	938.1	940.0	941.8	943.7	945.7
137.5°	968.9	971.2	973.4	975.8	978.0	980.2	982.3	984.4	986.4	988.5	990.5
140°	1000.4	1002.0	1003.7	1005.3	1006.9	1008.8	1011.1	1013.3	1015.5	1017.8	1019.6
142.5°	1026.7	1028.2	1029.7	1031.1	1032.6	1034.7	1037.2	1039.7	1042.3	1044.9	1046.5
145°	1068.2	1067.9	1067.7	1067.6	1067.3	1068.9	1072.4	1075.8	1079.3	1082.8	1084.2
147.5°	1104.2	1103.5	1102.7	1101.9	1101.1	1102.4	1105.9	1109.2	1112.7	1116.1	1117.1
150°	1127.7	1126.2	1124.8	1123.3	1122.0	1122.8	1126.1	1129.4	1132.6	1135.8	1137.1
152.5°	1147.4	1145.8	1144.2	1142.6	1141.1	1141.8	1144.9	1148.0	1151.1	1154.2	1155.4
155°	1176.1	1174.3	1172.5	1170.6	1168.8	1169.2	1171.6	1174.0	1176.5	1178.9	1180.1
157.5°	1198.7	1197.1	1195.6	1194.0	1192.5	1192.6	1194.3	1195.9	1197.7	1199.4	1200.8
160°	1211.9	1210.7	1209.4	1208.2	1206.9	1206.9	1208.2	1209.4	1210.7	1211.9	1213.1
162.5°	1223.6	1222.4	1221.1	1219.9	1218.7	1218.6	1219.6	1220.7	1221.8	1222.8	1224.2
165°	1239.3	1238.0	1236.8	1235.6	1234.4	1234.1	1234.7	1235.4	1236.0	1236.6	1237.9
167.5°	1251.0	1249.8	1248.5	1247.3	1246.1	1245.8	1246.4	1246.9	1247.5	1248.1	1249.5
170°	1257.6	1256.4	1255.2	1254.0	1252.8	1252.3	1252.8	1253.1	1253.5	1254.0	1255.3
172.5°	1262.0	1260.8	1259.6	1258.4	1257.1	1256.7	1257.1	1257.5	1257.9	1258.4	1259.7
175°	1267.7	1266.3	1264.8	1263.4	1262.0	1261.5	1261.9	1262.3	1262.7	1263.1	1264.6
177.5°	1268.6	1267.5	1266.3	1265.2	1264.0	1263.5	1263.7	1263.9	1264.0	1264.2	1265.3
180°	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0	1458.0
2.5°	1451.1	1453.5	1455.9	1456.7	1456.3	1455.9	1455.3	1454.9
5°	1439.6	1442.3	1444.8	1445.7	1444.8	1444.0	1443.1	1442.3
7.5°	1416.3	1417.0	1417.8	1417.5	1415.9	1414.4	1412.9	1411.4
10°	1392.9	1392.1	1391.2	1389.9	1388.1	1386.4	1384.6	1382.9
12.5°	1366.2	1364.6	1363.0	1360.8	1357.9	1355.0	1352.0	1349.1
15°	1316.3	1310.7	1305.1	1300.9	1298.0	1295.0	1292.1	1289.2
17.5°	1259.8	1253.2	1246.6	1240.7	1235.7	1230.6	1225.5	1220.6
20°	1220.4	1213.1	1205.7	1198.9	1192.4	1185.9	1179.5	1173.0
22.5°	1177.2	1167.7	1158.2	1151.1	1146.3	1141.5	1136.7	1131.9
25°	1105.4	1093.5	1081.4	1073.2	1068.8	1064.4	1060.0	1055.6
27.5°	1037.1	1023.0	1009.0	998.5	991.5	984.6	977.6	970.6
30°	988.8	973.8	958.8	947.4	939.5	931.6	923.7	915.8
32.5°	940.2	923.2	906.0	893.8	886.4	878.9	871.4	864.0
35°	864.3	845.8	827.3	814.9	808.4	801.9	795.5	789.1
37.5°	790.3	770.0	749.6	735.7	728.4	721.0	713.6	706.2
40°	740.8	720.0	699.2	685.0	677.3	669.7	662.1	654.4
42.5°	690.9	669.3	647.8	633.4	625.9	618.5	611.2	603.8
45°	618.1	597.3	576.4	562.6	555.5	548.5	541.4	534.4
47.5°	547.3	526.7	505.9	492.4	486.0	479.7	473.2	466.8
50°	501.9	481.6	461.4	448.2	442.0	435.8	429.7	423.5
52.5°	458.9	439.4	419.9	407.3	401.6	395.9	390.2	384.5
55°	393.6	376.1	358.4	346.9	341.3	335.7	330.2	324.6
57.5°	334.3	318.1	302.0	291.6	287.0	282.2	277.6	272.9
60°	293.3	278.4	263.5	253.7	248.9	244.3	239.5	234.9
62.5°	257.9	243.6	229.4	220.8	218.0	215.2	212.3	209.6
65°	209.7	199.7	189.7	184.3	183.4	182.5	181.7	180.8
67.5°	169.3	164.7	160.1	157.3	156.4	155.5	154.5	153.6
70°	147.2	144.3	141.4	139.3	138.1	136.9	135.8	134.6
72.5°	128.1	125.6	123.1	121.6	120.9	120.2	119.4	118.7
75°	101.4	99.4	97.4	96.2	95.9	95.6	95.3	95.0
77.5°	76.8	75.7	74.5	73.6	73.2	72.8	72.2	71.8
80°	61.0	59.8	58.6	58.0	58.0	58.0	58.0	58.0
82.5°	46.1	45.4	44.7	44.3	44.3	44.3	44.3	44.3
85°	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1
87.5°	12.1	12.1	12.0	12.0	12.1	12.1	12.2	12.3
90°	20.3	21.4	22.4	23.1	23.5	23.9	24.3	24.7
92.5°	22.3	22.8	23.3	23.8	24.0	24.2	24.5	24.7
95°	37.7	38.7	39.8	40.2	40.0	39.8	39.5	39.3
97.5°	49.4	50.2	51.1	51.6	51.8	52.1	52.3	52.5
100°	55.4	57.1	58.7	59.7	60.1	60.5	61.0	61.3
102.5°	57.9	60.0	62.1	63.5	64.0	64.6	65.2	65.7
105°	60.3	62.5	64.7	66.3	67.2	67.9	68.7	69.6
107.5°	73.6	71.3	69.1	68.4	69.1	69.9	70.8	71.5
110°	119.5	99.2	78.8	69.1	69.8	70.7	71.5	72.3



TEST NUMBER: P331762-935

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	255.6	181.4	107.2	70.4	71.1	71.7	72.4	73.0
115°	376.3	282.2	188.0	133.6	119.0	104.4	89.7	75.1
117.5°	580.0	557.2	534.4	498.9	450.8	402.7	354.6	306.4
120°	675.8	678.2	680.7	668.1	640.7	613.2	585.7	558.4
122.5°	717.0	718.5	720.0	718.0	712.7	707.4	702.1	696.7
125°	776.3	777.7	779.1	780.2	780.8	781.4	782.0	782.6
127.5°	831.0	833.1	835.2	836.3	836.4	836.5	836.6	836.7
130°	865.7	868.0	870.2	871.2	871.1	870.8	870.6	870.5
132.5°	899.5	901.5	903.4	904.2	904.0	903.8	903.6	903.4
135°	947.7	949.8	951.7	952.6	952.2	951.7	951.4	951.0
137.5°	992.5	994.5	996.4	997.1	996.4	995.7	995.1	994.4
140°	1021.5	1023.3	1025.1	1025.5	1024.5	1023.5	1022.4	1021.5
142.5°	1048.2	1049.9	1051.5	1051.9	1050.9	1049.8	1048.9	1047.8
145°	1085.6	1087.0	1088.5	1088.6	1087.7	1086.7	1085.6	1084.6
147.5°	1118.2	1119.3	1120.3	1120.4	1119.6	1118.7	1117.8	1117.0
150°	1138.3	1139.5	1140.7	1140.8	1139.8	1138.8	1137.8	1136.8
152.5°	1156.6	1157.9	1159.1	1159.0	1157.6	1156.3	1154.9	1153.7
155°	1181.3	1182.6	1183.8	1183.5	1181.9	1180.3	1178.7	1177.1
157.5°	1202.1	1203.5	1204.9	1204.8	1203.2	1201.6	1200.1	1198.4
160°	1214.3	1215.5	1216.7	1216.6	1215.2	1213.8	1212.4	1210.9
162.5°	1225.5	1226.9	1228.4	1228.1	1226.4	1224.7	1222.9	1221.2
165°	1239.4	1240.8	1242.3	1242.3	1240.8	1239.4	1237.9	1236.6
167.5°	1250.9	1252.3	1253.8	1253.5	1251.7	1249.9	1248.1	1246.2
170°	1256.8	1258.2	1259.6	1259.4	1257.6	1255.8	1254.0	1252.1
172.5°	1261.2	1262.6	1264.0	1263.9	1262.0	1260.2	1258.4	1256.5
175°	1265.9	1267.4	1268.8	1268.5	1266.4	1264.4	1262.4	1260.3
177.5°	1266.4	1267.6	1268.8	1268.6	1267.1	1265.7	1264.2	1262.7
180°	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9

(END OF REPORT)