

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: P332977

Luminaire Tested: **SA4XXRDIP-C1020D1035U835-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332977
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXRDIP-C1020D1035U835-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1035 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

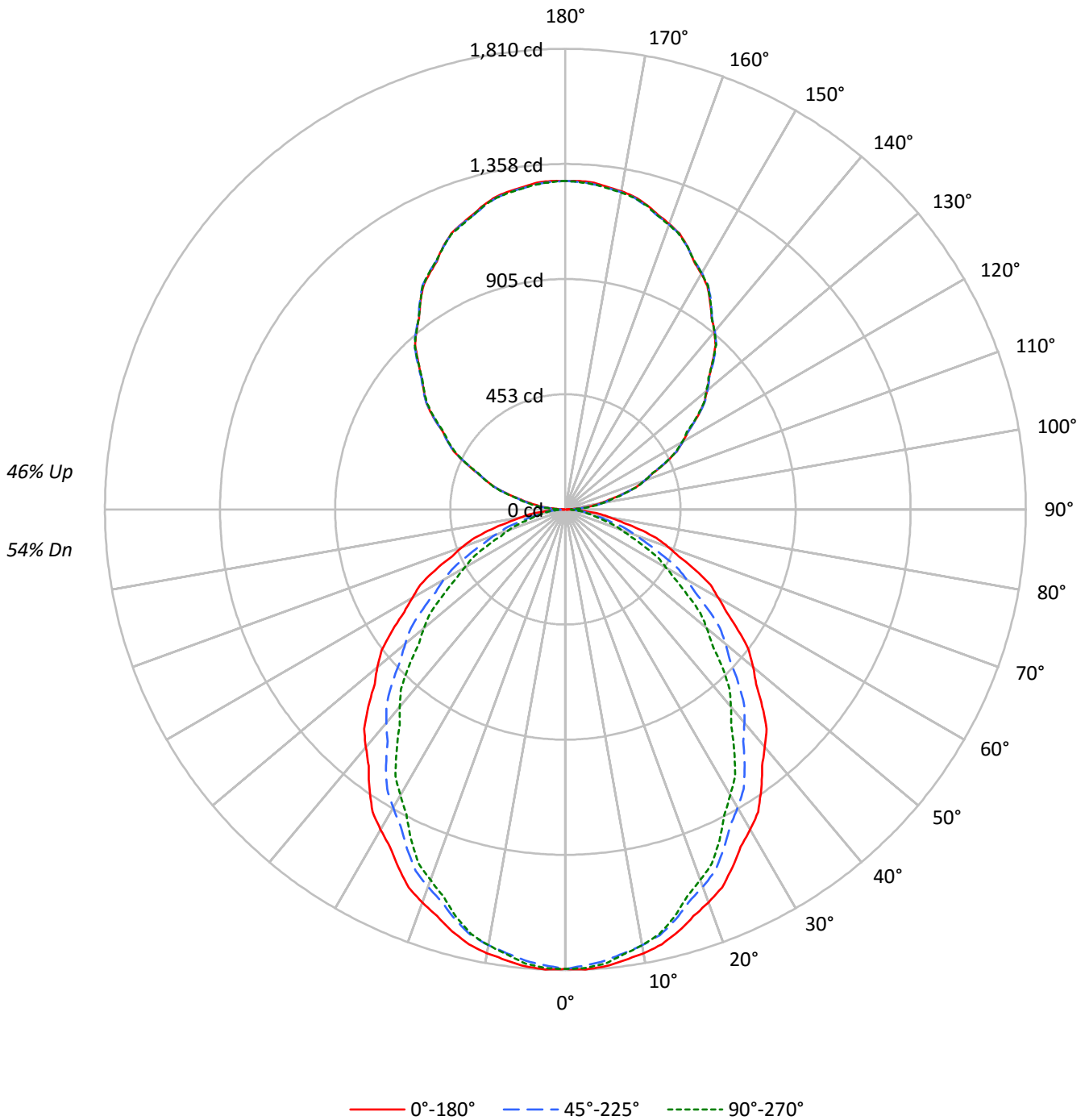
Lumens per Lamp: N/A
Luminaire Lumens: 7756.4 lumens
Efficiency: N/A
Efficacy: 128.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 60.5
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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	60	60	60	54
1	99	95	91	87	92	88	85	82	75	73	71	64	62	61	53	52	51	46
2	90	83	77	72	84	77	72	68	66	62	59	56	54	51	47	45	43	39
3	83	73	66	60	76	68	62	57	59	54	50	50	46	43	42	39	37	33
4	76	65	57	51	70	61	54	48	52	47	43	45	41	37	38	35	32	29
5	70	58	50	44	64	54	47	42	47	41	37	40	36	33	34	31	28	25
6	64	52	44	38	59	49	42	36	42	37	33	37	32	29	31	28	25	22
7	59	47	39	34	55	44	37	32	39	33	29	33	29	26	28	25	22	20
8	55	43	35	30	51	40	33	28	35	30	26	31	26	23	26	23	20	18
9	51	39	32	27	48	37	30	26	32	27	23	28	24	21	24	21	18	16
10	48	36	29	24	45	34	27	23	30	25	21	26	22	19	22	19	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14577	14577	14577
5°	14610	14431	14521
10°	14519	14258	14258
15°	14352	13959	13855
20°	14123	13564	13315
25°	13831	13104	12772
30°	13546	12618	12089
35°	13231	12113	11404
40°	12852	11540	10666
45°	12501	10970	9913
50°	12103	10315	9117
55°	11676	9633	8251
60°	11207	8885	7367
65°	10776	7950	6497
70°	10150	6918	5516
75°	9357	5736	4485
80°	8164	4370	4114
85°	6919	3974	3714



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	169.6	2.2
10°-20°	473.0	6.1
20°-30°	683.0	8.8
30°-40°	774.2	10.0
40°-50°	747.6	9.6
50°-60°	621.7	8.0
60°-70°	429.3	5.5
70°-80°	217.6	2.8
80°-90°	59.7	0.8
90°-100°	85.1	1.1
100°-110°	252.2	3.3
110°-120°	428.0	5.5
120°-130°	564.3	7.3
130°-140°	633.8	8.2
140°-150°	622.8	8.0
150°-160°	523.8	6.8
160°-170°	348.5	4.5
170°-180°	122.0	1.6
0°-30°	1325.6	17.1
0°-40°	2099.9	27.1
0°-60°	3469.2	44.7
0°-90°	4175.7	53.8
90°-120°	765.3	9.9
90°-150°	2586.3	33.3
90°-180°	3581.0	46.2
0°-180°	7756.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1806	1806	1806	1806	1806	
5°	1803	1797	1781	1794	1792	171
15°	1717	1704	1670	1667	1658	484
25°	1553	1526	1471	1448	1434	715
35°	1342	1297	1229	1183	1157	839
45°	1095	1042	961	896	868	844
55°	830	772	684	615	586	742
65°	564	503	416	359	340	557
75°	300	248	184	153	144	317
85°	75	48	43	40	40	84
90°	3	14	22	28	30	7
95°	60	69	76	79	79	67
105°	233	234	238	241	244	247
115°	435	435	433	432	431	429
125°	634	634	633	631	629	565
135°	818	823	824	821	818	632
145°	993	997	998	997	994	621
155°	1138	1138	1137	1140	1137	523
165°	1239	1236	1234	1239	1236	349
175°	1289	1284	1283	1289	1283	122
180°	1291	1291	1291	1291	1291	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7
2.5°	1810.1	1809.1	1808.1	1807.2	1806.2	1804.3	1801.6	1798.9	1796.2	1793.5	1796.2
5°	1802.9	1801.7	1800.5	1799.2	1798.0	1795.5	1791.9	1788.2	1784.5	1780.8	1783.9
7.5°	1786.6	1785.3	1784.0	1782.7	1781.4	1778.4	1773.6	1768.8	1764.0	1759.2	1761.2
10°	1771.1	1769.6	1768.0	1766.5	1765.0	1761.4	1755.9	1750.4	1744.8	1739.3	1740.5
12.5°	1751.2	1749.4	1747.6	1745.9	1744.1	1739.9	1733.4	1726.9	1720.4	1713.9	1714.6
15°	1717.2	1714.4	1711.7	1708.9	1706.1	1700.9	1693.2	1685.5	1677.9	1670.2	1669.6
17.5°	1676.0	1672.0	1668.0	1664.0	1660.0	1653.4	1644.2	1635.0	1625.8	1616.5	1614.8
20°	1643.9	1639.9	1635.9	1631.9	1627.9	1620.7	1610.3	1599.8	1589.4	1578.9	1576.5
22.5°	1608.5	1604.0	1599.5	1595.1	1590.6	1582.7	1571.6	1560.4	1549.2	1538.0	1534.3
25°	1552.7	1547.1	1541.6	1536.1	1530.5	1521.5	1508.9	1496.3	1483.7	1471.1	1465.9
27.5°	1494.0	1487.1	1480.2	1473.2	1466.3	1456.1	1442.6	1429.2	1415.7	1402.2	1395.8
30°	1453.1	1445.4	1437.8	1430.1	1422.4	1411.3	1396.9	1382.4	1368.0	1353.6	1345.9
32.5°	1410.0	1401.3	1392.6	1384.0	1375.3	1363.5	1348.6	1333.7	1318.7	1303.8	1294.9
35°	1342.5	1332.7	1322.8	1313.0	1303.2	1290.6	1275.2	1259.9	1244.5	1229.1	1218.7
37.5°	1270.3	1260.2	1250.1	1239.9	1229.8	1216.2	1199.2	1182.2	1165.1	1148.1	1136.4
40°	1219.5	1209.3	1199.2	1189.0	1178.9	1165.1	1147.6	1130.0	1112.5	1095.0	1082.1
42.5°	1170.8	1160.2	1149.5	1138.9	1128.3	1113.8	1095.6	1077.3	1059.1	1040.8	1027.7
45°	1095.0	1083.7	1072.3	1060.9	1049.5	1034.6	1016.2	997.8	979.3	960.9	945.9
47.5°	1016.8	1005.0	993.3	981.6	969.8	954.4	935.2	916.0	896.8	877.7	862.1
50°	963.7	951.7	939.7	927.7	915.7	899.9	880.3	860.6	840.9	821.3	805.9
52.5°	909.5	897.7	886.0	874.3	862.5	846.6	826.4	806.3	786.1	766.0	750.4
55°	829.6	817.3	805.0	792.7	780.4	764.3	744.3	724.3	704.4	684.4	668.4
57.5°	750.5	737.7	724.9	712.1	699.4	683.1	663.5	643.8	624.1	604.5	588.3
60°	694.1	681.8	669.5	657.2	644.9	628.9	609.3	589.6	569.9	550.3	534.3
62.5°	643.2	630.4	617.6	604.8	592.1	575.6	555.4	535.3	515.1	495.0	480.2
65°	564.1	550.9	537.7	524.5	511.3	494.8	475.2	455.5	435.8	416.2	403.0
67.5°	482.0	469.3	456.7	444.0	431.3	415.9	397.6	379.4	361.1	342.9	331.5
70°	430.0	417.1	404.2	391.3	378.4	363.2	345.7	328.1	310.6	293.1	283.0
72.5°	374.7	363.0	351.3	339.7	328.0	313.9	297.4	280.8	264.3	247.8	239.1
75°	300.0	288.7	277.3	265.9	254.6	241.6	227.2	212.8	198.3	183.9	176.8
77.5°	224.3	214.6	205.0	195.3	185.7	175.0	163.3	151.7	140.0	128.3	124.2
80°	175.6	166.7	157.8	148.9	140.0	130.9	121.7	112.5	103.2	94.0	93.1
82.5°	133.6	125.4	117.2	109.0	100.9	94.1	88.9	83.6	78.3	73.0	72.3
85°	74.7	68.5	62.4	56.2	50.1	46.5	45.6	44.7	43.8	42.9	42.2
87.5°	26.0	24.6	23.1	21.6	20.1	19.4	19.5	19.7	19.8	19.9	19.9
90°	3.0	5.4	7.9	10.3	12.8	14.9	16.6	18.4	20.2	22.0	23.3
92.5°	21.4	24.2	26.9	29.7	32.5	34.6	35.8	37.0	38.3	39.5	40.3
95°	59.9	61.9	63.9	65.9	67.9	69.6	71.2	72.8	74.3	75.9	76.5
97.5°	104.6	106.2	107.8	109.4	111.0	112.7	114.5	116.3	118.2	120.0	120.8
100°	139.7	140.6	141.5	142.4	143.3	144.7	146.7	148.7	150.7	152.7	153.2
102.5°	176.5	176.8	177.2	177.5	177.9	179.0	180.8	182.6	184.4	186.3	186.9
105°	232.6	232.8	233.0	233.2	233.5	234.0	234.9	235.8	236.7	237.6	238.2
107.5°	291.5	291.7	292.0	292.3	292.5	292.7	292.9	293.0	293.1	293.3	293.9
110°	331.4	331.8	332.3	332.7	333.2	333.3	333.0	332.8	332.6	332.4	331.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	372.9	373.0	373.1	373.2	373.3	373.1	372.7	372.3	371.9	371.5	371.4
115°	435.2	435.2	435.2	435.2	435.2	435.0	434.5	434.1	433.6	433.2	433.0
117.5°	493.9	494.1	494.2	494.4	494.6	494.5	494.2	493.9	493.6	493.3	492.5
120°	533.0	533.9	534.8	535.7	536.6	536.7	536.0	535.3	534.7	534.0	532.9
122.5°	573.7	574.1	574.4	574.8	575.1	575.2	574.9	574.5	574.2	573.9	573.2
125°	633.8	633.8	633.8	633.8	633.8	633.7	633.5	633.3	633.0	632.8	632.4
127.5°	688.3	689.0	689.6	690.3	691.0	691.1	690.8	690.4	690.1	689.7	689.3
130°	726.6	727.3	728.0	728.6	729.3	729.6	729.6	729.6	729.6	729.6	729.2
132.5°	765.8	766.3	766.7	767.2	767.7	767.9	767.7	767.5	767.3	767.2	766.7
135°	817.5	818.8	820.1	821.5	822.8	823.5	823.5	823.5	823.5	823.5	823.0
137.5°	873.8	874.4	875.0	875.6	876.3	876.7	877.1	877.5	877.8	878.2	877.6
140°	911.3	911.7	912.2	912.6	913.1	913.3	913.3	913.3	913.3	913.3	913.1
142.5°	945.6	946.1	946.5	947.0	947.4	947.5	947.4	947.2	947.0	946.8	946.8
145°	993.1	994.0	994.9	995.8	996.7	997.2	997.5	997.7	997.9	998.1	997.9
147.5°	1040.3	1041.3	1042.4	1043.5	1044.5	1045.0	1044.8	1044.6	1044.4	1044.3	1044.1
150°	1069.0	1069.9	1070.8	1071.7	1072.6	1073.0	1073.0	1073.0	1073.0	1073.0	1073.0
152.5°	1096.2	1096.7	1097.2	1097.8	1098.3	1098.6	1098.8	1099.0	1099.2	1099.3	1099.9
155°	1137.9	1137.9	1137.9	1137.9	1137.9	1137.8	1137.5	1137.3	1137.1	1136.9	1137.8
157.5°	1173.0	1172.6	1172.2	1171.8	1171.4	1171.2	1171.1	1171.1	1171.1	1171.0	1171.7
160°	1193.8	1193.5	1193.3	1193.1	1192.9	1192.7	1192.4	1192.2	1192.0	1191.8	1192.4
162.5°	1212.9	1212.4	1211.8	1211.2	1210.6	1210.2	1210.0	1209.8	1209.6	1209.3	1210.5
165°	1238.7	1238.0	1237.4	1236.7	1236.0	1235.5	1235.0	1234.6	1234.1	1233.7	1235.0
167.5°	1258.5	1257.5	1256.6	1255.7	1254.7	1254.3	1254.3	1254.4	1254.4	1254.5	1255.8
170°	1269.6	1268.5	1267.4	1266.3	1265.2	1264.7	1265.0	1265.2	1265.4	1265.6	1267.0
172.5°	1277.6	1276.7	1275.8	1274.8	1273.9	1273.4	1273.5	1273.5	1273.6	1273.6	1275.1
175°	1288.6	1287.5	1286.4	1285.3	1284.2	1283.5	1283.3	1283.0	1282.8	1282.6	1284.2
177.5°	1292.2	1291.3	1290.4	1289.5	1288.6	1288.2	1288.2	1288.2	1288.2	1288.2	1289.4
180°	1290.6	1290.6	1290.6	1290.6	1290.6	1290.6	1290.6	1290.6	1290.6	1290.6	1290.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7
2.5°	1798.9	1801.6	1804.3	1805.6	1805.3	1805.1	1804.8	1804.6
5°	1786.9	1790.0	1793.1	1794.3	1793.7	1793.1	1792.5	1791.9
7.5°	1763.2	1765.1	1767.1	1767.6	1766.6	1765.6	1764.6	1763.6
10°	1741.8	1743.0	1744.2	1744.2	1743.0	1741.8	1740.5	1739.3
12.5°	1715.3	1716.1	1716.8	1716.3	1714.6	1712.9	1711.2	1709.5
15°	1669.0	1668.3	1667.7	1666.3	1664.2	1662.0	1659.9	1657.7
17.5°	1613.1	1611.4	1609.7	1607.2	1603.9	1600.7	1597.4	1594.1
20°	1574.0	1571.6	1569.1	1565.9	1561.9	1557.9	1553.9	1549.9
22.5°	1530.6	1526.9	1523.3	1519.8	1516.5	1513.3	1510.0	1506.8
25°	1460.6	1455.4	1450.2	1446.0	1443.0	1439.9	1436.8	1433.8
27.5°	1389.3	1382.9	1376.4	1371.0	1366.6	1362.1	1357.7	1353.3
30°	1338.2	1330.5	1322.8	1316.5	1311.6	1306.7	1301.8	1296.9
32.5°	1286.0	1277.1	1268.2	1261.4	1256.7	1252.0	1247.4	1242.7
35°	1208.2	1197.8	1187.3	1179.4	1173.8	1168.3	1162.8	1157.2
37.5°	1124.8	1113.1	1101.4	1092.8	1087.3	1081.7	1076.2	1070.7
40°	1069.2	1056.3	1043.4	1034.2	1028.7	1023.1	1017.6	1012.1
42.5°	1014.5	1001.4	988.2	978.8	973.0	967.2	961.4	955.7
45°	930.8	915.7	900.7	890.4	884.9	879.3	873.8	868.3
47.5°	846.5	830.9	815.2	804.4	798.3	792.2	786.1	780.1
50°	790.5	775.2	759.8	749.2	743.4	737.5	731.7	725.9
52.5°	734.7	719.1	703.5	692.7	686.6	680.5	674.4	668.4
55°	652.4	636.5	620.5	609.6	603.7	597.9	592.1	586.2
57.5°	572.0	555.8	539.6	529.3	524.8	520.4	516.0	511.6
60°	518.3	502.3	486.4	475.9	471.0	466.1	461.2	456.3
62.5°	465.5	450.7	436.0	426.6	422.7	418.8	414.8	410.9
65°	389.7	376.5	363.3	354.9	351.2	347.5	343.8	340.1
67.5°	320.1	308.8	297.4	289.7	285.6	281.6	277.5	273.5
70°	272.8	262.7	252.6	245.9	242.9	239.8	236.7	233.7
72.5°	230.4	221.8	213.1	207.4	204.5	201.7	198.9	196.1
75°	169.8	162.7	155.6	151.2	149.3	147.5	145.6	143.8
77.5°	120.1	116.0	111.8	109.5	108.9	108.4	107.8	107.3
80°	92.2	91.3	90.3	89.7	89.4	89.1	88.8	88.5
82.5°	71.6	71.0	70.3	69.8	69.5	69.2	68.9	68.6
85°	41.6	41.0	40.4	40.1	40.1	40.1	40.1	40.1
87.5°	19.9	19.9	20.0	20.1	20.5	20.8	21.1	21.5
90°	24.6	26.0	27.3	28.2	28.6	29.1	29.5	29.9
92.5°	41.1	41.9	42.7	43.3	43.5	43.8	44.1	44.3
95°	77.2	77.9	78.5	78.9	78.9	78.9	78.9	78.9
97.5°	121.6	122.4	123.2	123.6	123.6	123.6	123.6	123.6
100°	153.6	154.0	154.5	154.7	154.7	154.7	154.7	154.7
102.5°	187.5	188.1	188.7	189.1	189.3	189.5	189.7	189.8
105°	238.9	239.6	240.2	240.9	241.5	242.2	242.9	243.5
107.5°	294.5	295.1	295.7	296.0	296.0	295.9	295.9	295.8
110°	331.5	331.0	330.6	330.7	331.4	332.0	332.7	333.4



TEST NUMBER: P332977

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	371.3	371.2	371.2	371.2	371.3	371.4	371.6	371.7
115°	432.7	432.5	432.3	432.1	431.9	431.6	431.4	431.2
117.5°	491.8	491.0	490.3	489.7	489.2	488.8	488.3	487.9
120°	531.8	530.7	529.6	529.2	529.7	530.1	530.6	531.0
122.5°	572.4	571.7	570.9	570.1	569.3	568.5	567.7	566.9
125°	631.9	631.5	631.0	630.6	630.2	629.7	629.3	628.8
127.5°	688.8	688.4	687.9	687.5	687.2	686.8	686.5	686.1
130°	728.8	728.3	727.9	727.2	726.3	725.4	724.5	723.6
132.5°	766.3	765.8	765.4	765.0	764.6	764.3	763.9	763.6
135°	822.6	822.1	821.7	821.1	820.5	819.8	819.1	818.5
137.5°	877.0	876.4	875.9	875.6	875.8	875.9	876.0	876.2
140°	912.9	912.6	912.4	912.2	912.0	911.7	911.5	911.3
142.5°	946.7	946.7	946.7	946.6	946.6	946.5	946.5	946.4
145°	997.7	997.5	997.2	996.8	996.1	995.5	994.8	994.1
147.5°	1043.9	1043.7	1043.5	1043.3	1043.1	1042.9	1042.7	1042.5
150°	1073.0	1073.0	1073.0	1072.9	1072.7	1072.4	1072.2	1072.0
152.5°	1100.4	1100.9	1101.5	1101.5	1100.9	1100.3	1099.7	1099.1
155°	1138.7	1139.5	1140.4	1140.4	1139.5	1138.7	1137.8	1136.9
157.5°	1172.3	1173.0	1173.7	1173.6	1172.9	1172.1	1171.4	1170.6
160°	1193.1	1193.8	1194.4	1194.2	1193.1	1192.0	1190.9	1189.8
162.5°	1211.7	1212.9	1214.1	1214.2	1213.1	1212.0	1210.9	1209.7
165°	1236.4	1237.7	1239.0	1239.2	1238.4	1237.5	1236.6	1235.7
167.5°	1257.1	1258.5	1259.8	1259.8	1258.4	1257.0	1255.6	1254.3
170°	1268.3	1269.6	1271.0	1270.8	1269.3	1267.7	1266.2	1264.6
172.5°	1276.6	1278.1	1279.7	1279.6	1278.1	1276.5	1275.0	1273.4
175°	1285.7	1287.3	1288.8	1288.8	1287.3	1285.7	1284.2	1282.6
177.5°	1290.7	1291.9	1293.2	1293.1	1291.7	1290.2	1288.8	1287.4
180°	1290.6	1290.6	1290.6	1290.6	1290.6	1290.6	1290.6	1290.6

(END OF REPORT)