

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: P332659-940

Luminaire Tested: **SA4XXDIP-C1020D1035U940-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332659-940
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: SA4XXDIP-C1020D1035U940-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1035 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

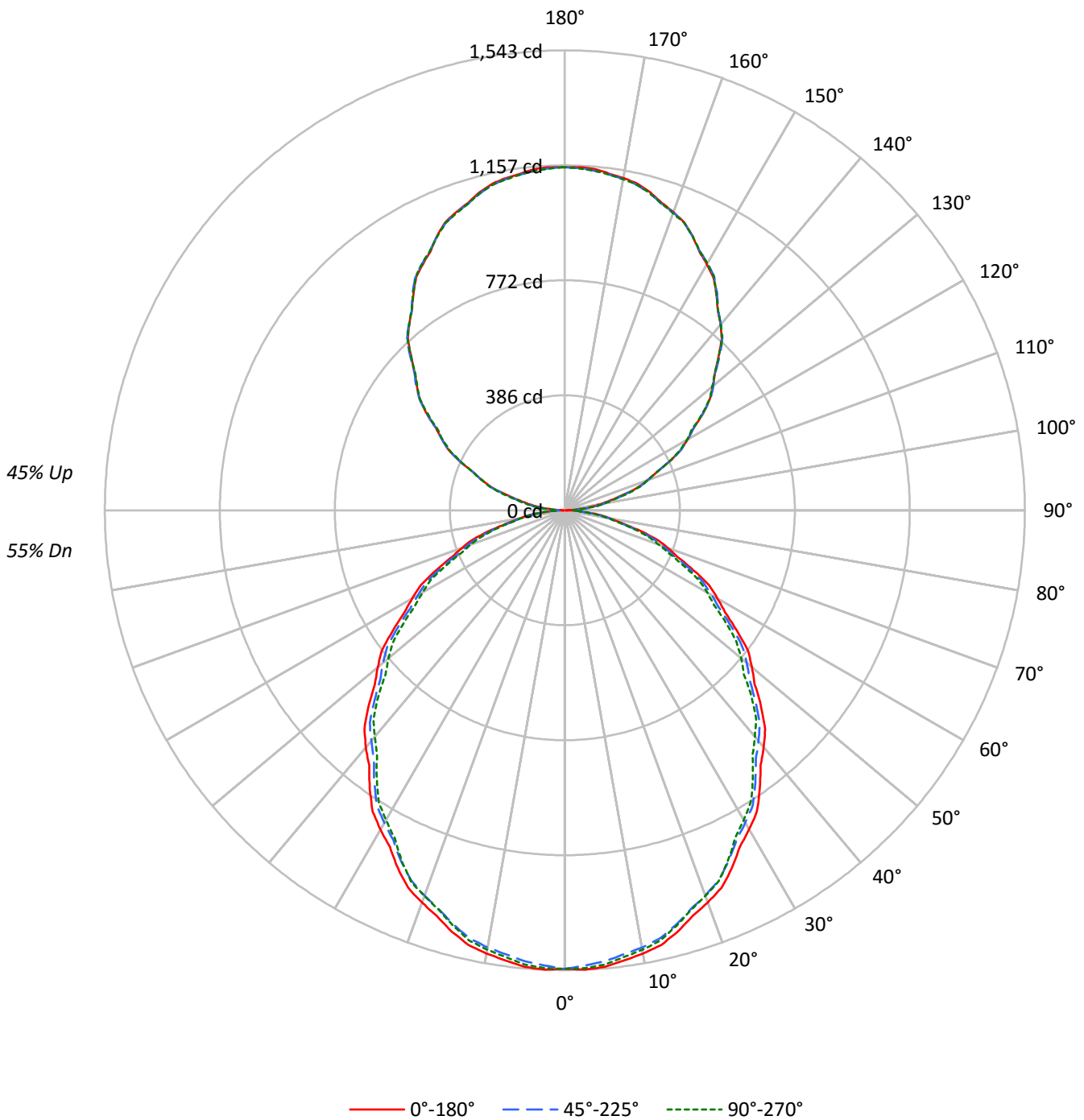
Lumens per Lamp: N/A
Luminaire Lumens: 7144.8 lumens
Efficiency: N/A
Efficacy: 118.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

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	50	30	10	0	
RCR																						
0	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55				
1	99	95	91	87	92	88	85	81	76	73	71	64	62	61	54	53	51	46				
2	90	83	76	71	83	77	71	67	66	62	59	56	53	51	47	45	43	39				
3	82	73	65	59	76	68	61	56	58	53	49	50	46	43	42	39	37	33				
4	75	64	56	50	70	60	53	47	52	46	42	44	40	37	38	34	32	28				
5	69	57	49	43	64	54	46	41	47	41	36	40	35	32	34	30	28	25				
6	64	51	43	37	59	48	41	35	42	36	32	36	32	28	31	27	24	22				
7	59	46	38	33	55	44	36	31	38	32	28	33	28	25	28	24	22	19				
8	55	42	34	29	51	40	33	28	35	29	25	30	25	22	26	22	19	17				
9	51	39	31	26	47	36	29	25	32	26	22	28	23	20	24	20	18	15				
10	48	35	28	23	44	33	27	22	29	24	20	26	21	18	22	19	16	14				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12421	12421	12421
5°	12459	12309	12399
10°	12381	12209	12269
15°	12232	12035	12066
20°	12032	11820	11832
25°	11805	11575	11541
30°	11527	11286	11182
35°	11239	10984	10838
40°	10940	10642	10446
45°	10628	10304	10106
50°	10282	10003	9693
55°	9909	9614	9301
60°	9536	9177	8898
65°	9116	8760	8407
70°	8641	8207	7886
75°	7923	7539	7346
80°	7053	6760	6592
85°	6169	5937	5826



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	144.9	2.0
10°-20°	408.3	5.7
20°-30°	600.9	8.4
30°-40°	698.6	9.8
40°-50°	698.6	9.8
50°-60°	611.1	8.6
60°-70°	453.8	6.4
70°-80°	257.8	3.6
80°-90°	77.8	1.1
90°-100°	75.9	1.1
100°-110°	224.9	3.1
110°-120°	381.7	5.3
120°-130°	503.2	7.0
130°-140°	565.2	7.9
140°-150°	555.4	7.8
150°-160°	467.1	6.5
160°-170°	310.8	4.3
170°-180°	108.8	1.5
0°-30°	1154.1	16.2
0°-40°	1852.6	25.9
0°-60°	3162.3	44.3
0°-90°	3951.8	55.3
90°-120°	682.4	9.6
90°-150°	2306.2	32.3
90°-180°	3193.0	44.7
0°-180°	7144.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1539	1539	1539	1539	1539	
5°	1537	1532	1519	1532	1530	146
15°	1464	1458	1440	1447	1444	412
25°	1325	1316	1300	1300	1296	609
35°	1140	1131	1114	1106	1100	713
45°	931	922	902	889	885	717
55°	704	700	683	669	661	630
65°	477	471	459	447	440	472
75°	254	248	242	237	236	270
85°	67	66	64	64	63	73
90°	3	12	20	25	27	7
95°	53	61	68	70	70	59
105°	207	208	212	214	217	220
115°	388	388	386	385	384	383
125°	565	565	564	562	561	504
135°	729	734	734	732	730	564
145°	886	889	890	889	886	554
155°	1015	1015	1014	1017	1014	467
165°	1105	1102	1100	1105	1102	311
175°	1149	1145	1144	1149	1144	109
180°	1151	1151	1151	1151	1151	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6
2.5°	1542.6	1541.9	1541.2	1540.6	1540.0	1538.4	1536.0	1533.6	1531.2	1528.7	1531.0
5°	1537.4	1536.3	1535.3	1534.1	1533.0	1531.0	1527.9	1524.9	1522.0	1518.9	1522.0
7.5°	1523.1	1522.0	1520.9	1519.8	1518.8	1516.5	1513.1	1509.8	1506.5	1503.2	1505.6
10°	1510.3	1509.2	1508.1	1507.0	1505.9	1503.6	1500.0	1496.5	1492.9	1489.3	1491.5
12.5°	1493.5	1492.5	1491.3	1490.2	1489.2	1486.7	1482.9	1479.2	1475.3	1471.6	1474.0
15°	1463.5	1462.3	1461.2	1460.2	1459.0	1456.4	1452.3	1448.2	1444.1	1440.0	1441.6
17.5°	1427.2	1425.8	1424.4	1423.1	1421.7	1419.1	1415.1	1411.3	1407.4	1403.6	1404.5
20°	1400.5	1399.2	1397.8	1396.4	1395.1	1392.3	1388.2	1384.1	1380.0	1375.9	1376.7
22.5°	1372.0	1370.1	1368.3	1366.5	1364.8	1361.7	1357.6	1353.5	1349.4	1345.3	1346.8
25°	1325.3	1323.5	1321.5	1319.6	1317.7	1314.8	1311.0	1307.2	1303.3	1299.5	1299.8
27.5°	1272.1	1270.2	1268.1	1266.1	1264.2	1261.4	1257.8	1254.3	1250.7	1247.1	1246.5
30°	1236.6	1234.4	1232.2	1230.0	1227.8	1224.9	1221.4	1217.8	1214.2	1210.7	1209.6
32.5°	1199.1	1197.1	1195.2	1193.2	1191.2	1188.3	1184.5	1180.8	1177.0	1173.2	1171.9
35°	1140.4	1138.5	1136.6	1134.7	1132.7	1129.9	1126.1	1122.2	1118.4	1114.5	1112.6
37.5°	1078.5	1076.7	1075.0	1073.3	1071.5	1068.6	1064.4	1060.3	1056.2	1052.1	1050.1
40°	1038.1	1035.9	1033.7	1031.5	1029.3	1026.2	1022.1	1018.0	1013.9	1009.8	1007.0
42.5°	994.7	993.4	992.0	990.8	989.4	986.5	982.0	977.4	972.9	968.3	965.1
45°	930.9	928.9	927.0	925.1	923.2	920.0	915.6	911.2	906.9	902.5	899.5
47.5°	864.0	862.7	861.4	860.1	858.7	856.0	852.0	847.9	843.9	839.8	836.4
50°	818.7	817.5	816.5	815.4	814.2	811.8	808.0	804.1	800.3	796.5	792.6
52.5°	774.3	772.9	771.6	770.3	769.0	766.3	762.2	758.2	754.1	750.1	746.7
55°	704.0	703.1	702.3	701.5	700.7	698.4	694.6	690.7	686.9	683.1	679.8
57.5°	636.9	636.0	635.1	634.1	633.2	630.8	627.1	623.3	619.5	615.7	612.6
60°	590.6	589.2	587.8	586.5	585.1	582.6	579.1	575.5	571.9	568.4	565.9
62.5°	545.2	544.0	542.9	541.7	540.6	538.1	534.3	530.6	526.7	523.0	520.8
65°	477.2	475.7	474.4	473.1	471.6	469.6	466.8	464.1	461.4	458.6	455.9
67.5°	408.6	407.3	406.1	404.8	403.5	401.6	399.0	396.4	393.7	391.1	388.4
70°	366.1	364.3	362.3	360.4	358.5	356.4	354.3	352.0	349.9	347.7	345.4
72.5°	320.8	318.9	317.0	315.0	313.2	311.3	309.5	307.8	306.0	304.3	302.6
75°	254.0	252.6	251.2	249.9	248.5	247.1	245.8	244.4	243.0	241.7	240.6
77.5°	190.1	189.5	188.9	188.3	187.7	186.8	185.6	184.4	183.2	182.0	181.6
80°	151.7	150.8	150.0	149.2	148.4	147.7	147.1	146.6	146.1	145.4	144.9
82.5°	114.1	113.8	113.4	113.0	112.6	112.4	112.3	112.2	112.1	111.9	111.6
85°	66.6	66.6	66.6	66.6	66.6	66.3	65.7	65.2	64.6	64.1	64.1
87.5°	26.2	26.4	26.6	26.8	27.0	27.2	27.3	27.4	27.5	27.6	27.8
90°	2.7	4.8	7.0	9.2	11.4	13.3	14.8	16.4	18.0	19.6	20.8
92.5°	19.1	21.6	24.0	26.5	29.0	30.9	31.9	33.0	34.2	35.2	35.9
95°	53.4	55.2	57.0	58.8	60.5	62.1	63.5	64.9	66.3	67.7	68.2
97.5°	93.3	94.7	96.1	97.6	99.0	100.5	102.1	103.7	105.4	107.0	107.7
100°	124.6	125.4	126.2	127.0	127.8	129.0	130.8	132.6	134.4	136.2	136.6
102.5°	157.4	157.7	158.0	158.3	158.6	159.6	161.2	162.8	164.4	166.1	166.7
105°	207.4	207.6	207.8	207.9	208.2	208.7	209.5	210.3	211.1	211.9	212.4
107.5°	259.9	260.1	260.4	260.6	260.8	261.0	261.2	261.3	261.4	261.5	262.1
110°	295.5	295.9	296.3	296.7	297.1	297.2	296.9	296.8	296.6	296.4	296.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	332.5	332.6	332.7	332.8	332.9	332.7	332.3	332.0	331.6	331.3	331.2
115°	388.1	388.1	388.1	388.1	388.1	387.9	387.4	387.1	386.6	386.3	386.1
117.5°	440.4	440.6	440.7	440.9	441.0	441.0	440.7	440.4	440.1	439.9	439.2
120°	475.3	476.1	476.9	477.7	478.5	478.6	478.0	477.3	476.8	476.2	475.2
122.5°	511.6	511.9	512.2	512.6	512.8	512.9	512.6	512.3	512.0	511.8	511.1
125°	565.2	565.2	565.2	565.2	565.2	565.1	564.9	564.7	564.5	564.3	563.9
127.5°	613.8	614.4	614.9	615.5	616.2	616.3	616.0	615.6	615.4	615.0	614.7
130°	647.9	648.5	649.2	649.7	650.3	650.6	650.6	650.6	650.6	650.6	650.2
132.5°	682.9	683.3	683.7	684.1	684.6	684.7	684.6	684.4	684.2	684.1	683.7
135°	729.0	730.1	731.3	732.5	733.7	734.3	734.3	734.3	734.3	734.3	733.9
137.5°	779.2	779.7	780.2	780.8	781.4	781.8	782.1	782.5	782.7	783.1	782.6
140°	812.6	813.0	813.4	813.8	814.2	814.4	814.4	814.4	814.4	814.4	814.2
142.5°	843.2	843.6	844.0	844.5	844.8	844.9	844.8	844.6	844.5	844.3	844.3
145°	885.6	886.4	887.2	888.0	888.8	889.2	889.5	889.7	889.8	890.0	889.8
147.5°	927.6	928.5	929.5	930.5	931.4	931.8	931.7	931.5	931.3	931.2	931.0
150°	953.2	954.0	954.8	955.6	956.4	956.8	956.8	956.8	956.8	956.8	956.8
152.5°	977.5	977.9	978.4	978.9	979.4	979.6	979.8	980.0	980.2	980.3	980.8
155°	1014.7	1014.7	1014.7	1014.7	1014.7	1014.6	1014.3	1014.1	1014.0	1013.8	1014.6
157.5°	1046.0	1045.6	1045.3	1044.9	1044.6	1044.4	1044.3	1044.3	1044.3	1044.2	1044.8
160°	1064.5	1064.3	1064.1	1063.9	1063.7	1063.5	1063.3	1063.1	1062.9	1062.7	1063.3
162.5°	1081.6	1081.1	1080.6	1080.0	1079.5	1079.1	1079.0	1078.8	1078.6	1078.3	1079.4
165°	1104.6	1103.9	1103.4	1102.8	1102.2	1101.7	1101.3	1100.9	1100.5	1100.1	1101.3
167.5°	1122.2	1121.3	1120.5	1119.7	1118.8	1118.5	1118.5	1118.6	1118.6	1118.7	1119.8
170°	1132.1	1131.1	1130.2	1129.2	1128.2	1127.7	1128.0	1128.2	1128.4	1128.5	1129.8
172.5°	1139.2	1138.4	1137.6	1136.8	1136.0	1135.5	1135.6	1135.6	1135.7	1135.7	1137.0
175°	1149.1	1148.1	1147.1	1146.1	1145.1	1144.5	1144.3	1144.1	1143.9	1143.7	1145.1
177.5°	1152.3	1151.5	1150.7	1149.9	1149.1	1148.7	1148.7	1148.7	1148.7	1148.7	1149.8
180°	1150.8	1150.8	1150.8	1150.8	1150.8	1150.8	1150.8	1150.8	1150.8	1150.8	1150.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6
2.5°	1533.1	1535.3	1537.6	1538.6	1538.3	1538.1	1537.8	1537.7
5°	1524.9	1527.9	1531.0	1532.2	1531.7	1531.1	1530.5	1530.0
7.5°	1508.0	1510.4	1512.8	1513.9	1513.5	1513.1	1512.8	1512.5
10°	1493.7	1495.9	1498.1	1498.9	1498.3	1497.8	1497.3	1496.7
12.5°	1476.4	1478.8	1481.2	1482.0	1481.3	1480.5	1479.7	1479.0
15°	1443.3	1444.9	1446.6	1447.0	1446.2	1445.4	1444.6	1443.7
17.5°	1405.6	1406.7	1407.7	1407.9	1407.4	1406.9	1406.3	1405.7
20°	1377.5	1378.4	1379.2	1379.3	1378.8	1378.2	1377.7	1377.2
22.5°	1348.3	1349.8	1351.2	1351.5	1350.5	1349.5	1348.5	1347.6
25°	1300.0	1300.3	1300.6	1300.1	1299.0	1298.0	1296.8	1295.7
27.5°	1245.9	1245.2	1244.6	1243.6	1242.2	1240.8	1239.4	1238.1
30°	1208.5	1207.4	1206.3	1205.1	1203.7	1202.3	1201.0	1199.6
32.5°	1170.5	1169.3	1168.0	1166.6	1165.2	1163.9	1162.5	1161.1
35°	1110.7	1108.8	1106.9	1105.2	1103.8	1102.5	1101.1	1099.7
37.5°	1047.9	1045.9	1043.8	1041.9	1040.1	1038.2	1036.4	1034.7
40°	1004.2	1001.5	998.8	996.8	995.3	994.0	992.7	991.2
42.5°	962.0	958.8	955.6	953.5	952.6	951.6	950.7	949.9
45°	896.4	893.4	890.4	888.5	887.7	886.9	886.0	885.2
47.5°	833.0	829.6	826.3	823.5	821.4	819.3	817.3	815.2
50°	788.8	785.0	781.1	778.4	776.7	775.1	773.5	771.8
52.5°	743.3	739.9	736.5	733.8	731.6	729.6	727.5	725.4
55°	676.5	673.2	669.9	667.4	665.8	664.1	662.5	660.8
57.5°	609.5	606.4	603.2	600.8	599.2	597.7	596.1	594.5
60°	563.5	561.0	558.5	556.6	555.2	553.8	552.5	551.1
62.5°	518.5	516.2	514.0	512.2	510.9	509.4	508.1	506.8
65°	453.2	450.4	447.6	445.6	444.3	442.9	441.5	440.1
67.5°	385.8	383.2	380.6	379.1	378.6	378.3	377.9	377.6
70°	343.3	341.1	338.9	337.4	336.6	335.7	334.9	334.1
72.5°	300.8	299.0	297.3	296.0	295.2	294.4	293.6	292.7
75°	239.4	238.4	237.3	236.6	236.3	236.0	235.8	235.5
77.5°	181.3	181.0	180.7	180.1	179.4	178.7	178.0	177.3
80°	144.4	143.8	143.3	142.9	142.6	142.3	142.0	141.8
82.5°	111.3	110.9	110.7	110.3	110.0	109.8	109.5	109.2
85°	64.1	64.1	64.1	63.9	63.7	63.4	63.1	62.9
87.5°	28.1	28.3	28.5	28.7	28.8	28.9	28.9	29.0
90°	21.9	23.2	24.3	25.1	25.5	25.9	26.3	26.7
92.5°	36.6	37.4	38.1	38.6	38.8	39.1	39.3	39.5
95°	68.8	69.5	70.0	70.4	70.4	70.4	70.4	70.4
97.5°	108.4	109.1	109.9	110.2	110.2	110.2	110.2	110.2
100°	137.0	137.3	137.8	137.9	137.9	137.9	137.9	137.9
102.5°	167.2	167.7	168.3	168.6	168.8	169.0	169.2	169.2
105°	213.0	213.7	214.2	214.8	215.3	216.0	216.6	217.1
107.5°	262.6	263.1	263.7	263.9	263.9	263.9	263.9	263.8
110°	295.6	295.2	294.8	294.9	295.5	296.0	296.7	297.3



TEST NUMBER: P332659-940

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	331.1	331.0	331.0	331.0	331.1	331.2	331.4	331.4
115°	385.8	385.7	385.5	385.3	385.1	384.9	384.7	384.5
117.5°	438.5	437.8	437.2	436.7	436.2	435.9	435.4	435.1
120°	474.2	473.2	472.3	471.9	472.3	472.7	473.1	473.5
122.5°	510.4	509.8	509.1	508.4	507.7	506.9	506.2	505.5
125°	563.5	563.1	562.7	562.3	562.0	561.5	561.2	560.7
127.5°	614.2	613.9	613.4	613.1	612.8	612.4	612.2	611.8
130°	649.9	649.4	649.1	648.5	647.6	646.8	646.0	645.2
132.5°	683.3	682.9	682.5	682.2	681.8	681.5	681.2	680.9
135°	733.5	733.1	732.7	732.2	731.6	731.0	730.4	729.9
137.5°	782.0	781.5	781.0	780.8	781.0	781.0	781.1	781.3
140°	814.0	813.8	813.6	813.4	813.2	813.0	812.8	812.6
142.5°	844.2	844.2	844.2	844.1	844.1	844.0	844.0	843.9
145°	889.7	889.5	889.2	888.9	888.2	887.7	887.1	886.4
147.5°	930.9	930.7	930.5	930.3	930.1	930.0	929.8	929.6
150°	956.8	956.8	956.8	956.7	956.5	956.3	956.1	955.9
152.5°	981.2	981.7	982.2	982.2	981.7	981.1	980.6	980.1
155°	1015.4	1016.1	1016.9	1016.9	1016.1	1015.4	1014.6	1013.8
157.5°	1045.4	1046.0	1046.6	1046.5	1045.9	1045.2	1044.6	1043.8
160°	1063.9	1064.5	1065.1	1064.9	1063.9	1062.9	1061.9	1061.0
162.5°	1080.5	1081.6	1082.6	1082.7	1081.7	1080.8	1079.8	1078.7
165°	1102.5	1103.7	1104.8	1105.0	1104.3	1103.5	1102.7	1101.9
167.5°	1121.0	1122.2	1123.4	1123.4	1122.1	1120.9	1119.6	1118.5
170°	1131.0	1132.1	1133.4	1133.2	1131.8	1130.4	1129.1	1127.7
172.5°	1138.4	1139.7	1141.1	1141.0	1139.7	1138.3	1136.9	1135.5
175°	1146.5	1147.9	1149.2	1149.2	1147.9	1146.5	1145.1	1143.7
177.5°	1150.9	1152.0	1153.2	1153.1	1151.8	1150.5	1149.2	1148.0
180°	1150.8	1150.8	1150.8	1150.8	1150.8	1150.8	1150.8	1150.8

(END OF REPORT)