

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: P332202-940

Luminaire Tested: **S123DIW-S1000D1320U940-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332202-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S1000D1320U940-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1000 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8383.4 lumens
Efficiency: N/A
Efficacy: 120.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: General Diffuse

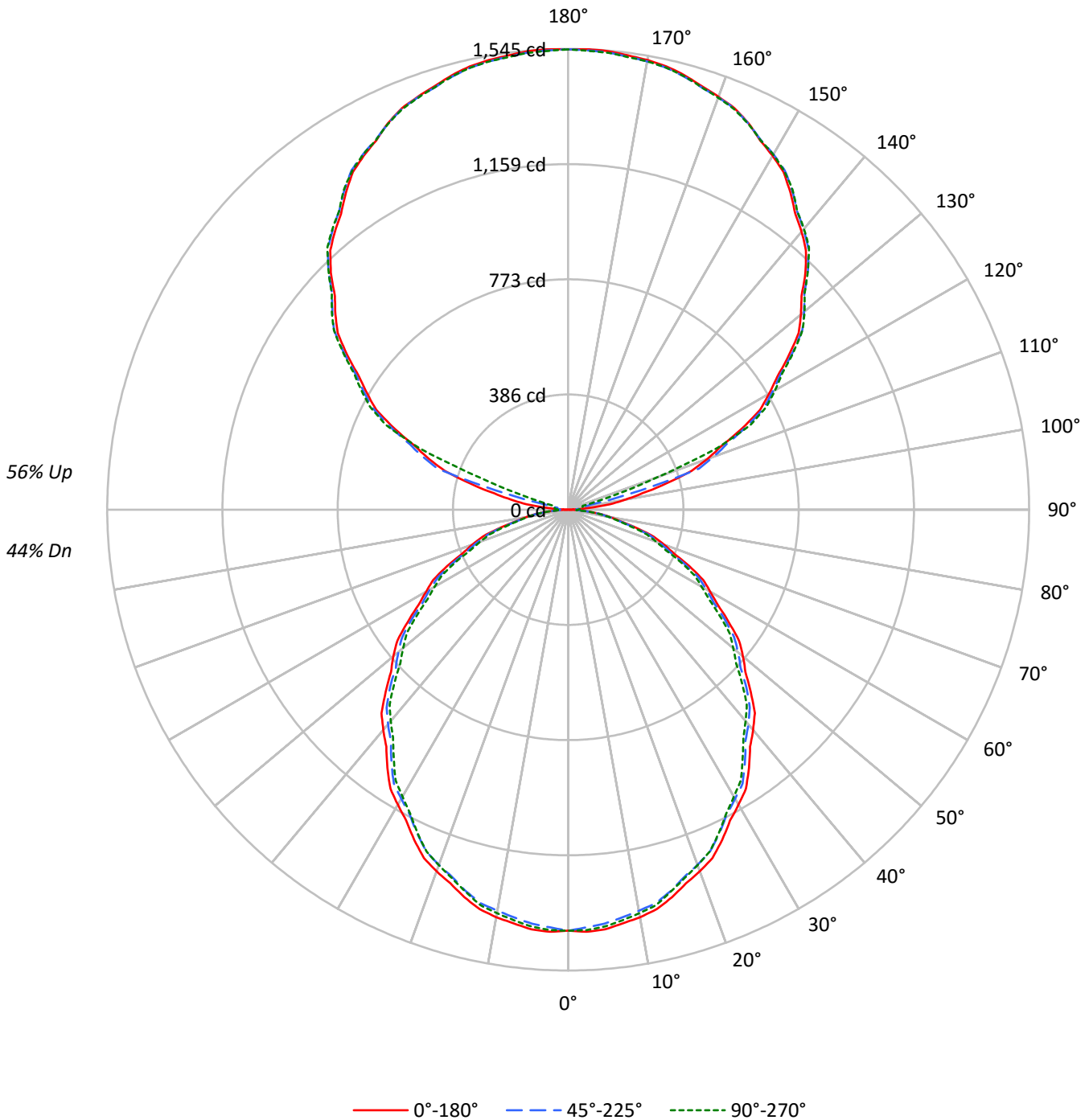
Input Watts (W): 69.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	97	97	97	97	80	80	80	65	65	65	50	50	50	44
1	96	92	88	85	88	84	81	78	70	68	65	57	55	54	45	43	42	37
2	88	80	74	69	80	74	68	64	61	57	54	50	47	45	39	37	36	31
3	80	71	63	57	73	65	58	53	54	49	45	44	41	38	35	32	30	26
4	73	62	55	49	67	57	51	45	48	43	39	39	35	32	31	28	26	22
5	67	56	47	42	61	51	44	39	43	37	33	35	31	28	28	25	23	19
6	62	50	42	36	56	46	39	34	39	33	29	32	28	24	25	22	20	17
7	57	45	37	31	52	41	34	29	35	29	25	29	25	22	23	20	18	15
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16	13
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	20	17	14	12
10	46	34	27	22	42	32	25	21	27	22	18	22	18	16	18	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15193	15193	15193
5°	15263	15055	15159
10°	15162	14924	15017
15°	14985	14755	14782
20°	14778	14513	14528
25°	14500	14226	14197
30°	14194	13908	13801
35°	13875	13571	13397
40°	13541	13198	12995
45°	13172	12858	12543
50°	12804	12439	12092
55°	12322	12003	11639
60°	11834	11496	11130
65°	11405	10942	10603
70°	10770	10313	9854
75°	9844	9491	9087
80°	8877	8498	8424
85°	7793	7497	7188



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.0	1.6
10°-20°	375.4	4.5
20°-30°	554.6	6.6
30°-40°	647.8	7.7
40°-50°	651.3	7.8
50°-60°	572.1	6.8
60°-70°	426.2	5.1
70°-80°	242.8	2.9
80°-90°	74.0	0.9
90°-100°	56.1	0.7
100°-110°	267.4	3.2
110°-120°	642.3	7.7
120°-130°	818.0	9.8
130°-140°	874.0	10.4
140°-150°	817.3	9.7
150°-160°	659.2	7.9
160°-170°	425.5	5.1
170°-180°	146.6	1.7
0°-30°	1062.9	12.7
0°-40°	1710.7	20.4
0°-60°	2934.1	35.0
0°-90°	3677.1	43.9
90°-120°	965.9	11.5
90°-150°	3475.0	41.5
90°-180°	4706.0	56.1
0°-180°	8383.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1412	1412	1412	1412	1412	
5°	1413	1406	1393	1405	1403	134
15°	1345	1339	1324	1333	1326	379
25°	1221	1213	1198	1199	1195	562
35°	1056	1048	1033	1026	1020	660
45°	865	860	845	831	824	668
55°	657	655	640	627	620	588
65°	448	441	430	420	416	442
75°	237	232	228	222	218	253
85°	63	61	61	58	58	69
90°	1	13	28	32	34	7
95°	70	26	36	43	44	86
105°	342	348	251	60	50	362
115°	641	648	658	669	674	632
125°	904	912	917	920	922	807
135°	1125	1132	1136	1139	1136	866
145°	1298	1306	1308	1310	1310	812
155°	1430	1428	1429	1434	1428	658
165°	1508	1504	1503	1511	1504	426
175°	1543	1538	1539	1546	1538	147
180°	1543	1543	1543	1543	1543	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5
2.5°	1416.3	1415.5	1414.6	1413.7	1412.9	1411.2	1408.9	1406.5	1404.2	1401.8	1403.9
5°	1412.6	1411.3	1410.0	1408.6	1407.3	1405.2	1402.2	1399.2	1396.2	1393.3	1396.0
7.5°	1398.8	1397.5	1396.2	1394.8	1393.5	1391.2	1388.2	1385.1	1382.1	1378.9	1381.3
10°	1387.2	1385.9	1384.5	1383.1	1381.8	1379.4	1375.9	1372.3	1368.9	1365.4	1367.8
12.5°	1371.6	1370.6	1369.4	1368.2	1367.2	1364.9	1361.6	1358.3	1355.0	1351.7	1353.5
15°	1344.7	1343.6	1342.6	1341.5	1340.4	1338.1	1334.6	1331.1	1327.6	1324.1	1326.2
17.5°	1313.4	1312.0	1310.6	1309.2	1307.8	1305.4	1301.8	1298.3	1294.9	1291.3	1292.8
20°	1290.1	1288.5	1286.9	1285.2	1283.6	1281.0	1277.6	1274.1	1270.6	1267.0	1268.1
22.5°	1263.9	1262.3	1260.7	1259.0	1257.4	1254.9	1251.3	1247.9	1244.4	1240.8	1241.7
25°	1220.9	1219.3	1217.7	1216.1	1214.4	1211.9	1208.4	1204.9	1201.4	1197.8	1198.1
27.5°	1175.1	1173.5	1171.9	1170.4	1168.8	1166.1	1162.3	1158.6	1154.8	1151.0	1151.2
30°	1142.0	1140.7	1139.3	1138.0	1136.7	1134.1	1130.3	1126.5	1122.8	1119.0	1119.0
32.5°	1109.0	1107.2	1105.5	1103.7	1101.9	1099.6	1096.6	1093.8	1090.8	1087.9	1086.4
35°	1055.9	1054.3	1052.7	1051.1	1049.4	1046.9	1043.3	1039.8	1036.3	1032.8	1031.2
37.5°	1001.5	999.4	997.4	995.3	993.3	990.5	986.9	983.4	979.8	976.2	974.3
40°	963.7	962.0	960.4	958.8	957.2	954.5	950.7	946.9	943.2	939.3	937.2
42.5°	925.8	923.9	922.1	920.2	918.5	915.6	911.9	908.1	904.3	900.5	898.4
45°	865.3	864.2	863.2	862.1	861.0	858.7	855.2	851.7	848.2	844.7	841.5
47.5°	805.4	803.8	802.3	800.7	799.2	796.7	793.4	790.1	786.8	783.5	780.3
50°	764.6	763.2	761.9	760.5	759.2	756.8	753.2	749.8	746.3	742.8	739.8
52.5°	721.8	720.9	720.1	719.2	718.2	715.9	712.2	708.5	704.7	701.0	698.5
55°	656.6	656.3	656.0	655.8	655.5	653.6	650.1	646.6	643.1	639.6	636.6
57.5°	594.4	593.5	592.6	591.7	590.8	588.9	586.1	583.3	580.5	577.7	575.1
60°	549.7	549.5	549.2	548.9	548.7	547.0	543.7	540.5	537.3	534.0	531.5
62.5°	510.0	509.3	508.5	507.8	507.2	505.2	501.9	498.7	495.5	492.2	489.8
65°	447.8	446.5	445.1	443.8	442.5	440.4	437.7	435.1	432.3	429.6	427.5
67.5°	382.1	380.8	379.7	378.5	377.3	375.7	373.6	371.6	369.5	367.5	365.6
70°	342.2	340.6	339.0	337.4	335.8	334.1	332.5	330.9	329.3	327.7	325.8
72.5°	300.5	299.3	298.1	296.9	295.8	294.3	292.4	290.6	288.7	286.9	285.3
75°	236.7	235.6	234.5	233.4	232.4	231.4	230.6	229.8	229.0	228.2	226.9
77.5°	180.1	179.5	178.9	178.3	177.7	176.9	176.0	175.0	174.1	173.1	172.2
80°	143.2	142.4	141.6	140.8	140.0	139.3	138.8	138.2	137.7	137.1	136.9
82.5°	107.3	107.1	107.0	106.8	106.6	106.5	106.4	106.3	106.2	106.1	105.6
85°	63.1	62.6	62.1	61.5	61.0	60.7	60.7	60.7	60.7	60.7	60.1
87.5°	25.5	25.3	25.2	25.1	24.9	25.1	25.5	25.9	26.4	26.8	26.8
90°	1.2	3.7	6.2	8.8	11.3	14.3	17.6	20.9	24.2	27.6	28.5
92.5°	21.3	20.6	19.9	19.2	18.5	19.4	21.8	24.3	26.8	29.3	30.9
95°	69.9	59.5	49.0	38.6	28.2	24.3	27.1	30.0	32.7	35.6	37.4
97.5°	140.5	135.9	131.2	126.5	121.8	110.3	91.9	73.7	55.3	36.9	39.0
100°	193.8	198.9	203.9	209.0	214.2	196.8	157.1	117.3	77.6	37.8	39.9
102.5°	254.3	258.0	261.6	265.3	269.0	249.1	205.7	162.3	118.9	75.4	69.1
105°	341.7	344.5	347.3	350.1	352.8	342.9	319.9	296.9	274.0	251.1	206.0
107.5°	433.9	436.1	438.4	440.6	442.8	445.8	449.4	453.0	456.6	460.2	427.1
110°	495.3	497.4	499.4	501.4	503.5	505.9	508.7	511.5	514.3	517.1	508.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	554.0	555.9	557.7	559.5	561.3	563.7	566.5	569.3	572.1	574.9	575.1
115°	641.0	642.5	644.0	645.5	647.0	649.0	651.2	653.5	655.9	658.2	660.7
117.5°	725.1	727.0	728.9	730.8	732.6	734.1	735.3	736.6	737.7	738.9	740.9
120°	777.4	779.7	781.9	784.3	786.6	788.1	788.8	789.6	790.4	791.1	793.2
122.5°	830.6	832.5	834.4	836.2	838.1	839.5	840.5	841.5	842.5	843.5	844.9
125°	903.5	905.5	907.6	909.6	911.7	913.2	914.2	915.3	916.2	917.3	917.7
127.5°	974.1	976.2	978.2	980.3	982.3	983.9	985.2	986.4	987.6	988.8	989.6
130°	1018.2	1020.2	1022.3	1024.3	1026.4	1027.9	1028.9	1029.9	1030.9	1031.9	1033.0
132.5°	1060.3	1062.4	1064.4	1066.5	1068.5	1070.0	1070.8	1071.6	1072.4	1073.2	1074.2
135°	1124.8	1126.3	1127.8	1129.4	1131.0	1132.2	1133.2	1134.3	1135.2	1136.3	1137.0
137.5°	1179.8	1181.8	1183.7	1185.6	1187.6	1188.8	1189.4	1190.0	1190.5	1191.1	1192.3
140°	1216.6	1218.1	1219.6	1221.1	1222.6	1223.8	1224.6	1225.3	1226.1	1226.8	1227.9
142.5°	1250.4	1252.0	1253.6	1255.1	1256.6	1257.8	1258.5	1259.3	1260.0	1260.8	1261.6
145°	1298.0	1299.8	1301.5	1303.3	1305.1	1306.2	1306.7	1307.2	1307.8	1308.2	1308.8
147.5°	1342.6	1343.8	1345.0	1346.1	1347.4	1348.2	1348.7	1349.2	1349.7	1350.2	1350.8
150°	1370.2	1370.9	1371.7	1372.4	1373.2	1373.9	1374.4	1374.8	1375.4	1375.9	1376.4
152.5°	1394.9	1395.3	1395.6	1396.0	1396.3	1396.7	1397.0	1397.3	1397.6	1397.9	1398.8
155°	1429.8	1429.3	1428.8	1428.3	1427.7	1427.6	1427.9	1428.2	1428.4	1428.6	1429.9
157.5°	1456.9	1456.8	1456.8	1456.7	1456.6	1456.5	1456.3	1456.0	1455.7	1455.5	1457.0
160°	1473.4	1473.1	1472.8	1472.6	1472.3	1472.1	1471.9	1471.6	1471.3	1471.1	1472.6
162.5°	1489.0	1488.3	1487.6	1486.9	1486.3	1485.9	1485.6	1485.3	1485.1	1484.8	1486.6
165°	1507.8	1507.0	1506.2	1505.5	1504.7	1504.2	1504.0	1503.7	1503.4	1503.2	1505.2
167.5°	1522.4	1521.4	1520.4	1519.4	1518.3	1517.9	1517.9	1517.9	1517.9	1517.9	1519.9
170°	1530.7	1529.6	1528.7	1527.7	1526.6	1526.1	1526.1	1526.1	1526.1	1526.1	1528.1
172.5°	1536.2	1535.0	1533.7	1532.5	1531.3	1530.8	1531.0	1531.2	1531.4	1531.6	1533.7
175°	1543.3	1542.0	1540.8	1539.4	1538.2	1537.7	1537.9	1538.2	1538.5	1538.7	1540.5
177.5°	1545.2	1544.1	1543.1	1542.1	1541.1	1540.7	1540.9	1541.1	1541.2	1541.5	1543.1
180°	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5	1411.5
2.5°	1406.0	1408.3	1410.4	1411.4	1411.1	1411.0	1410.7	1410.5
5°	1398.6	1401.3	1404.1	1405.2	1404.6	1404.1	1403.6	1403.0
7.5°	1383.8	1386.3	1388.7	1389.7	1389.4	1389.1	1388.8	1388.4
10°	1370.2	1372.6	1375.1	1376.0	1375.5	1374.9	1374.4	1373.9
12.5°	1355.3	1357.1	1358.9	1359.6	1359.3	1359.0	1358.6	1358.3
15°	1328.4	1330.5	1332.8	1333.0	1331.4	1329.7	1328.1	1326.5
17.5°	1294.3	1295.8	1297.4	1297.8	1297.3	1296.6	1296.0	1295.5
20°	1269.2	1270.3	1271.4	1271.5	1270.7	1269.9	1269.1	1268.3
22.5°	1242.6	1243.4	1244.3	1244.2	1243.2	1242.2	1241.2	1240.1
25°	1198.4	1198.7	1199.0	1198.7	1197.8	1197.0	1196.2	1195.4
27.5°	1151.5	1151.6	1151.9	1151.5	1150.5	1149.4	1148.4	1147.4
30°	1119.0	1119.0	1119.0	1118.0	1116.2	1114.3	1112.4	1110.4
32.5°	1084.9	1083.4	1081.9	1080.6	1079.6	1078.5	1077.5	1076.5
35°	1029.6	1028.0	1026.4	1024.8	1023.5	1022.2	1020.8	1019.5
37.5°	972.4	970.4	968.5	967.1	966.3	965.4	964.5	963.7
40°	935.0	932.9	930.8	929.1	928.0	926.9	925.9	924.8
42.5°	896.2	894.0	891.9	890.3	889.2	888.1	887.1	886.0
45°	838.2	835.0	831.8	829.5	828.1	826.8	825.5	824.0
47.5°	777.1	774.0	770.8	768.7	767.4	766.2	765.1	763.8
50°	736.8	733.9	730.8	728.6	727.0	725.3	723.7	722.1
52.5°	695.9	693.4	690.9	688.8	687.2	685.5	683.9	682.3
55°	633.6	630.7	627.8	625.5	624.2	622.9	621.5	620.2
57.5°	572.4	569.8	567.1	565.0	563.5	561.9	560.4	558.7
60°	529.1	526.7	524.3	522.5	521.0	519.7	518.4	517.0
62.5°	487.4	485.0	482.5	480.9	479.9	479.0	478.1	477.2
65°	425.3	423.1	421.0	419.5	418.7	417.9	417.1	416.3
67.5°	363.7	361.9	360.0	358.5	357.3	356.1	355.0	353.9
70°	323.9	322.0	320.1	318.5	317.2	315.8	314.5	313.1
72.5°	283.6	281.9	280.2	279.0	278.3	277.6	277.0	276.3
75°	225.5	224.1	222.7	221.7	220.9	220.1	219.3	218.5
77.5°	171.2	170.3	169.4	169.0	169.0	169.0	169.0	169.0
80°	136.6	136.3	136.1	135.9	135.9	135.9	135.9	135.9
82.5°	105.1	104.6	104.2	103.8	103.5	103.3	103.2	102.9
85°	59.6	59.0	58.5	58.2	58.2	58.2	58.2	58.2
87.5°	26.8	26.8	26.8	26.8	26.9	27.1	27.2	27.3
90°	29.5	30.6	31.6	32.4	32.9	33.3	33.9	34.4
92.5°	32.6	34.2	35.8	36.8	37.2	37.5	37.7	38.1
95°	39.1	40.9	42.7	43.6	43.6	43.6	43.6	43.6
97.5°	41.0	43.1	45.0	46.2	46.5	46.7	47.0	47.3
100°	41.9	44.0	46.0	47.2	47.3	47.6	47.9	48.2
102.5°	62.8	56.4	50.2	47.3	47.7	48.2	48.6	49.0
105°	160.9	115.8	70.7	48.4	49.0	49.4	49.9	50.5
107.5°	394.1	361.1	328.0	294.4	260.5	226.4	192.4	158.5
110°	500.2	491.9	483.5	461.0	424.6	388.2	351.8	315.3



TEST NUMBER: P332202-940

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	575.2	575.3	575.5	571.8	564.0	556.3	548.7	541.0
115°	663.3	665.8	668.3	670.1	671.1	672.2	673.2	674.2
117.5°	743.0	744.9	747.0	748.1	748.3	748.5	748.8	748.9
120°	795.2	797.3	799.3	800.3	800.3	800.3	800.3	800.3
122.5°	846.3	847.7	849.2	850.0	850.2	850.3	850.6	850.8
125°	918.3	918.8	919.3	919.8	920.3	920.9	921.3	921.9
127.5°	990.4	991.2	992.1	992.2	991.8	991.2	990.7	990.2
130°	1033.9	1035.0	1036.0	1036.3	1035.7	1035.3	1034.7	1034.2
132.5°	1075.2	1076.3	1077.3	1077.5	1076.7	1076.0	1075.3	1074.6
135°	1137.8	1138.5	1139.3	1139.3	1138.5	1137.8	1137.0	1136.3
137.5°	1193.6	1194.7	1196.0	1196.3	1195.8	1195.3	1194.8	1194.3
140°	1228.9	1229.9	1230.9	1231.2	1230.7	1230.1	1229.7	1229.1
142.5°	1262.4	1263.2	1264.1	1264.1	1263.4	1262.7	1261.9	1261.2
145°	1309.3	1309.7	1310.3	1310.5	1310.5	1310.5	1310.5	1310.5
147.5°	1351.2	1351.7	1352.3	1351.9	1350.8	1349.6	1348.4	1347.2
150°	1376.9	1377.4	1378.0	1377.8	1377.1	1376.3	1375.6	1374.8
152.5°	1399.7	1400.7	1401.6	1401.5	1400.3	1399.1	1397.9	1396.8
155°	1431.2	1432.4	1433.8	1433.6	1432.1	1430.6	1429.1	1427.5
157.5°	1458.6	1460.1	1461.6	1461.3	1459.4	1457.4	1455.4	1453.4
160°	1474.1	1475.7	1477.2	1477.0	1475.2	1473.5	1471.7	1469.9
162.5°	1488.3	1490.0	1491.7	1491.8	1490.2	1488.7	1487.1	1485.5
165°	1507.3	1509.3	1511.4	1511.4	1509.7	1507.9	1506.1	1504.3
167.5°	1522.0	1523.9	1526.0	1526.0	1523.9	1522.0	1519.9	1517.9
170°	1530.2	1532.2	1534.3	1534.3	1532.2	1530.2	1528.1	1526.1
172.5°	1535.7	1537.8	1539.8	1539.6	1537.4	1535.2	1532.9	1530.7
175°	1542.3	1544.1	1545.9	1545.7	1543.7	1541.7	1539.6	1537.6
177.5°	1544.7	1546.4	1548.0	1547.8	1545.8	1543.7	1541.7	1539.6
180°	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3	1543.3

(END OF REPORT)