

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: P332658-935

Luminaire Tested: **S124DIP-S1020D1035U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332658-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S1020D1035U935-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1035 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7370.4 lumens
Efficiency: N/A
Efficacy: 121.8 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

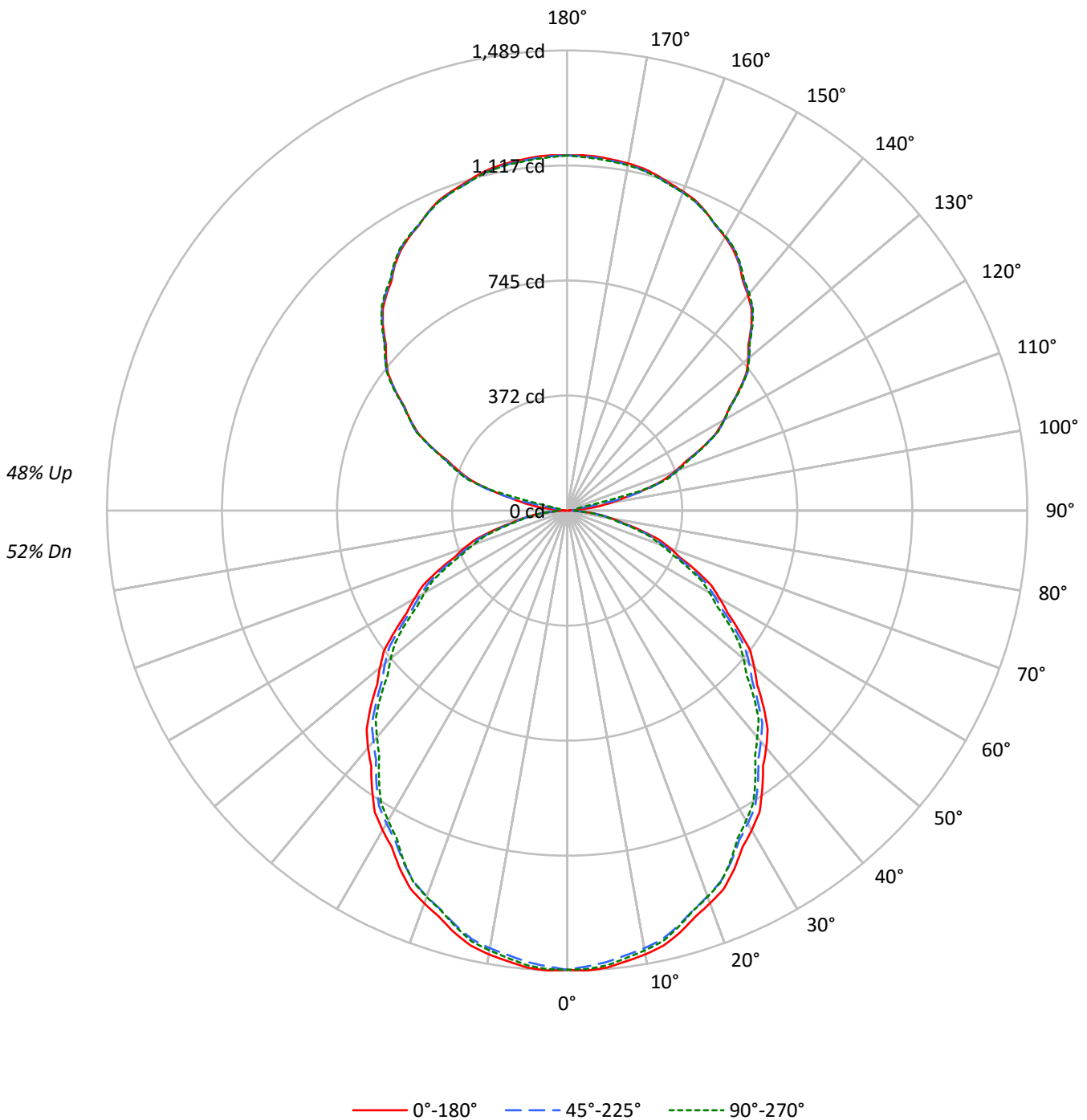
Input Watts (W): 60.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	108	108	108	108	99	99	99	99	84	84	84	70	70	70	58	58	58	52
1	98	94	90	86	91	87	83	80	74	71	69	62	60	59	51	50	49	44
2	89	82	76	70	82	76	71	66	65	61	57	54	51	49	45	43	41	36
3	82	72	65	59	75	67	60	55	57	52	48	48	44	41	40	37	35	31
4	75	64	56	50	69	59	52	47	51	45	41	43	39	35	36	33	30	26
5	68	57	49	43	63	53	46	40	45	40	35	38	34	31	32	29	26	23
6	63	51	43	37	58	47	40	35	41	35	31	35	30	27	29	26	23	20
7	58	46	38	32	54	43	36	31	37	31	27	32	27	24	27	23	21	18
8	54	42	34	29	50	39	32	27	34	28	24	29	25	21	24	21	18	16
9	50	38	31	26	47	36	29	24	31	26	22	27	22	19	22	19	17	14
10	47	35	28	23	44	33	26	22	29	23	20	25	20	17	21	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11994	11994	11994
5°	12030	11885	11972
10°	11954	11788	11847
15°	11810	11621	11651
20°	11618	11413	11424
25°	11399	11176	11144
30°	11130	10897	10797
35°	10852	10606	10465
40°	10564	10275	10086
45°	10261	9949	9758
50°	9928	9658	9359
55°	9568	9282	8981
60°	9206	8861	8591
65°	8800	8458	8118
70°	8344	7924	7615
75°	7648	7277	7093
80°	6811	6527	6365
85°	5956	5734	5622



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.9	1.9
10°-20°	394.2	5.3
20°-30°	580.2	7.9
30°-40°	674.5	9.2
40°-50°	674.5	9.2
50°-60°	590.0	8.0
60°-70°	438.2	5.9
70°-80°	248.9	3.4
80°-90°	75.2	1.0
90°-100°	39.3	0.5
100°-110°	250.6	3.4
110°-120°	479.4	6.5
120°-130°	608.6	8.3
130°-140°	651.1	8.8
140°-150°	608.9	8.3
150°-160°	491.0	6.7
160°-170°	316.7	4.3
170°-180°	109.2	1.5
0°-30°	1114.3	15.1
0°-40°	1788.8	24.3
0°-60°	3053.4	41.4
0°-90°	3815.7	51.8
90°-120°	769.3	10.4
90°-150°	2637.9	35.8
90°-180°	3555.0	48.2
0°-180°	7370.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1486	1486	1486	1486	1486	
5°	1484	1479	1467	1479	1477	141
15°	1413	1408	1390	1397	1394	398
25°	1280	1271	1255	1256	1251	588
35°	1101	1092	1076	1068	1062	688
45°	899	890	871	859	855	693
55°	680	675	660	646	638	609
65°	461	454	443	431	425	456
75°	245	239	233	229	227	261
85°	64	64	62	62	61	71
90°	3	12	19	24	26	6
95°	47	20	19	24	25	61
105°	259	264	268	274	245	271
115°	483	485	485	486	486	475
125°	679	682	681	683	684	606
135°	842	842	845	847	848	649
145°	971	974	974	975	976	607
155°	1065	1066	1063	1066	1064	491
165°	1123	1119	1119	1125	1118	317
175°	1149	1144	1145	1152	1142	109
180°	1149	1149	1149	1149	1149	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7
2.5°	1489.4	1488.8	1488.2	1487.5	1486.9	1485.4	1483.1	1480.7	1478.4	1476.1	1478.3
5°	1484.5	1483.4	1482.4	1481.3	1480.2	1478.3	1475.3	1472.4	1469.6	1466.6	1469.6
7.5°	1470.7	1469.6	1468.5	1467.5	1466.5	1464.3	1461.0	1457.8	1454.6	1451.4	1453.7
10°	1458.3	1457.2	1456.1	1455.1	1454.1	1451.8	1448.4	1444.9	1441.5	1438.0	1440.1
12.5°	1442.1	1441.1	1439.9	1438.9	1437.9	1435.5	1431.8	1428.2	1424.5	1420.9	1423.2
15°	1413.1	1412.0	1410.9	1409.9	1408.8	1406.3	1402.3	1398.4	1394.4	1390.4	1392.0
17.5°	1378.0	1376.7	1375.4	1374.1	1372.8	1370.2	1366.4	1362.7	1358.9	1355.2	1356.2
20°	1352.3	1351.0	1349.7	1348.3	1347.0	1344.4	1340.4	1336.4	1332.5	1328.5	1329.3
22.5°	1324.7	1322.9	1321.2	1319.5	1317.8	1314.8	1310.9	1306.9	1303.0	1299.0	1300.5
25°	1279.7	1277.9	1276.0	1274.1	1272.3	1269.5	1265.8	1262.1	1258.4	1254.7	1255.0
27.5°	1228.3	1226.4	1224.4	1222.5	1220.6	1218.0	1214.5	1211.1	1207.6	1204.2	1203.6
30°	1194.0	1191.9	1189.7	1187.7	1185.5	1182.8	1179.3	1175.9	1172.4	1169.0	1167.9
32.5°	1157.8	1155.9	1154.0	1152.1	1150.2	1147.4	1143.8	1140.1	1136.4	1132.8	1131.5
35°	1101.1	1099.3	1097.4	1095.6	1093.7	1091.0	1087.3	1083.6	1079.9	1076.2	1074.3
37.5°	1041.4	1039.7	1038.0	1036.3	1034.6	1031.8	1027.8	1023.8	1019.9	1015.9	1013.9
40°	1002.4	1000.2	998.1	996.0	993.9	990.8	986.9	982.9	979.0	975.0	972.3
42.5°	960.4	959.2	957.9	956.7	955.4	952.5	948.1	943.7	939.4	935.0	931.9
45°	898.8	896.9	895.1	893.2	891.4	888.3	884.1	879.9	875.6	871.4	868.5
47.5°	834.2	833.0	831.7	830.4	829.1	826.6	822.7	818.7	814.9	810.9	807.6
50°	790.5	789.4	788.3	787.3	786.2	783.9	780.2	776.4	772.7	769.0	765.3
52.5°	747.6	746.3	745.0	743.8	742.5	739.9	736.0	732.1	728.1	724.3	721.0
55°	679.8	678.9	678.1	677.3	676.6	674.3	670.6	666.9	663.2	659.5	656.3
57.5°	615.0	614.1	613.2	612.3	611.4	609.1	605.5	601.8	598.1	594.5	591.5
60°	570.2	568.9	567.6	566.3	564.9	562.6	559.1	555.7	552.2	548.8	546.4
62.5°	526.4	525.3	524.2	523.1	521.9	519.6	515.9	512.3	508.6	505.0	502.8
65°	460.7	459.3	458.1	456.8	455.4	453.4	450.7	448.2	445.5	442.8	440.2
67.5°	394.5	393.3	392.1	390.9	389.6	387.8	385.2	382.7	380.1	377.6	375.1
70°	353.5	351.7	349.8	348.0	346.1	344.1	342.1	339.9	337.9	335.7	333.6
72.5°	309.8	307.9	306.1	304.2	302.4	300.6	298.9	297.2	295.5	293.8	292.1
75°	245.2	243.9	242.5	241.3	240.0	238.6	237.3	236.0	234.6	233.3	232.3
77.5°	183.6	183.0	182.4	181.8	181.2	180.4	179.2	178.1	176.8	175.7	175.4
80°	146.5	145.6	144.8	144.0	143.3	142.6	142.1	141.5	141.0	140.4	139.9
82.5°	110.2	109.9	109.5	109.1	108.7	108.5	108.4	108.3	108.2	108.1	107.8
85°	64.3	64.3	64.3	64.3	64.3	64.1	63.5	62.9	62.4	61.9	61.9
87.5°	25.3	25.5	25.7	25.9	26.1	26.3	26.3	26.4	26.5	26.6	26.9
90°	2.6	4.6	6.8	8.9	11.0	12.8	14.3	15.8	17.4	18.9	20.1
92.5°	10.8	10.9	11.0	11.2	11.3	12.1	13.6	15.2	16.7	18.3	19.4
95°	47.3	40.8	34.3	27.8	21.3	18.2	18.3	18.5	18.7	18.9	20.1
97.5°	100.4	104.4	108.5	112.5	116.6	108.0	86.6	65.3	44.0	22.7	22.8
100°	140.9	144.4	147.8	151.3	154.7	143.3	116.9	90.6	64.1	37.8	34.6
102.5°	186.3	188.9	191.4	193.9	196.4	196.0	192.5	189.1	185.6	182.2	147.1
105°	258.7	259.8	261.0	262.2	263.3	264.3	265.3	266.2	267.3	268.2	269.9
107.5°	325.9	326.5	327.1	327.6	328.2	329.2	330.5	331.7	333.0	334.3	335.2
110°	371.3	371.9	372.5	373.0	373.6	374.4	375.6	376.8	377.9	379.0	379.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	415.3	416.4	417.4	418.4	419.5	420.3	420.8	421.3	421.8	422.3	422.3
115°	483.0	483.6	484.2	484.7	485.3	485.5	485.3	485.2	484.9	484.7	485.2
117.5°	544.1	544.8	545.6	546.4	547.2	547.7	548.1	548.5	549.0	549.4	549.3
120°	585.3	586.1	586.9	587.6	588.4	588.7	588.5	588.3	588.1	587.9	588.3
122.5°	623.8	624.3	624.7	625.2	625.7	626.0	626.3	626.5	626.8	627.1	627.3
125°	679.0	679.8	680.5	681.3	682.1	682.3	681.9	681.5	681.1	680.7	681.3
127.5°	731.2	731.4	731.7	731.8	732.0	732.5	733.5	734.3	735.2	736.1	736.0
130°	765.0	765.2	765.3	765.5	765.7	766.1	766.7	767.2	767.8	768.4	768.6
132.5°	795.9	796.3	796.6	796.9	797.3	797.8	798.6	799.3	800.0	800.7	800.9
135°	842.3	842.1	842.0	841.7	841.5	841.8	842.6	843.3	844.1	844.9	845.2
137.5°	883.4	883.5	883.6	883.6	883.7	884.2	885.0	885.9	886.7	887.5	887.9
140°	910.2	910.6	911.0	911.4	911.7	912.1	912.5	912.9	913.3	913.7	914.2
142.5°	934.3	935.0	935.6	936.3	937.0	937.5	937.7	938.0	938.1	938.4	938.8
145°	971.2	971.8	972.4	972.9	973.5	973.8	973.8	973.8	973.8	973.8	974.0
147.5°	1000.7	1001.7	1002.8	1003.8	1005.0	1005.4	1005.1	1005.0	1004.8	1004.6	1004.8
150°	1021.9	1022.7	1023.5	1024.2	1025.0	1025.3	1025.1	1024.9	1024.8	1024.5	1024.5
152.5°	1039.8	1040.4	1041.0	1041.6	1042.2	1042.4	1042.1	1041.7	1041.4	1041.0	1041.4
155°	1065.0	1065.1	1065.3	1065.5	1065.7	1065.5	1065.0	1064.4	1063.8	1063.2	1063.9
157.5°	1086.1	1086.0	1085.8	1085.7	1085.6	1085.2	1084.6	1083.9	1083.3	1082.6	1083.7
160°	1098.5	1097.9	1097.3	1096.7	1096.1	1095.8	1095.6	1095.4	1095.2	1095.0	1096.1
162.5°	1109.5	1108.7	1108.0	1107.2	1106.6	1106.1	1105.9	1105.7	1105.5	1105.4	1106.5
165°	1123.3	1122.4	1121.5	1120.5	1119.6	1119.0	1119.0	1119.0	1119.0	1119.0	1120.6
167.5°	1134.4	1133.4	1132.4	1131.4	1130.4	1129.9	1129.7	1129.6	1129.5	1129.4	1131.1
170°	1140.6	1139.4	1138.2	1137.1	1136.0	1135.5	1135.7	1135.9	1136.1	1136.3	1137.8
172.5°	1144.7	1143.6	1142.4	1141.3	1140.1	1139.6	1139.8	1140.1	1140.2	1140.4	1141.9
175°	1149.2	1148.1	1146.9	1145.7	1144.6	1144.1	1144.3	1144.5	1144.7	1144.9	1146.6
177.5°	1151.2	1150.1	1149.1	1148.1	1146.9	1146.6	1146.9	1147.2	1147.5	1147.8	1149.0
180°	1149.2	1149.2	1149.2	1149.2	1149.2	1149.2	1149.2	1149.2	1149.2	1149.2	1149.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7	1485.7
2.5°	1480.3	1482.5	1484.6	1485.6	1485.3	1485.1	1484.9	1484.7
5°	1472.4	1475.3	1478.3	1479.5	1478.9	1478.3	1477.8	1477.3
7.5°	1456.0	1458.4	1460.7	1461.7	1461.4	1461.0	1460.7	1460.4
10°	1442.3	1444.4	1446.5	1447.3	1446.7	1446.2	1445.7	1445.2
12.5°	1425.6	1427.9	1430.2	1431.0	1430.3	1429.5	1428.7	1428.1
15°	1393.6	1395.2	1396.8	1397.1	1396.4	1395.6	1394.8	1394.0
17.5°	1357.2	1358.2	1359.2	1359.4	1358.9	1358.4	1357.9	1357.3
20°	1330.1	1330.9	1331.7	1331.8	1331.3	1330.8	1330.2	1329.7
22.5°	1301.8	1303.3	1304.7	1304.9	1304.0	1303.0	1302.1	1301.1
25°	1255.3	1255.5	1255.8	1255.3	1254.3	1253.3	1252.2	1251.1
27.5°	1203.0	1202.3	1201.7	1200.8	1199.4	1198.1	1196.7	1195.4
30°	1166.9	1165.8	1164.8	1163.6	1162.3	1160.9	1159.6	1158.3
32.5°	1130.2	1129.0	1127.7	1126.4	1125.1	1123.8	1122.5	1121.1
35°	1072.5	1070.6	1068.8	1067.1	1065.8	1064.5	1063.2	1061.9
37.5°	1011.8	1009.9	1007.9	1006.0	1004.3	1002.5	1000.7	999.0
40°	969.7	967.0	964.4	962.4	961.0	959.8	958.5	957.1
42.5°	928.8	925.7	922.6	920.7	919.8	918.9	918.0	917.1
45°	865.6	862.6	859.7	857.9	857.1	856.4	855.5	854.7
47.5°	804.3	801.1	797.8	795.1	793.2	791.1	789.1	787.1
50°	761.6	757.9	754.2	751.6	749.9	748.4	746.8	745.2
52.5°	717.7	714.4	711.1	708.5	706.5	704.5	702.5	700.4
55°	653.2	650.0	646.8	644.5	642.8	641.3	639.6	638.1
57.5°	588.5	585.5	582.5	580.1	578.6	577.1	575.6	574.0
60°	544.1	541.7	539.2	537.4	536.1	534.8	533.5	532.1
62.5°	500.7	498.4	496.3	494.6	493.3	491.9	490.6	489.3
65°	437.6	434.9	432.2	430.2	429.0	427.7	426.3	425.0
67.5°	372.6	370.0	367.5	366.0	365.6	365.2	364.9	364.5
70°	331.5	329.3	327.3	325.8	325.0	324.2	323.4	322.6
72.5°	290.4	288.7	287.1	285.8	285.0	284.2	283.4	282.6
75°	231.2	230.1	229.1	228.4	228.2	227.9	227.6	227.4
77.5°	175.0	174.8	174.4	173.9	173.2	172.5	171.9	171.2
80°	139.4	138.9	138.4	137.9	137.7	137.4	137.2	136.9
82.5°	107.5	107.1	106.9	106.5	106.2	106.0	105.7	105.5
85°	61.9	61.9	61.9	61.7	61.5	61.2	61.0	60.7
87.5°	27.1	27.3	27.6	27.7	27.8	27.9	27.9	28.0
90°	21.2	22.4	23.5	24.3	24.6	25.1	25.4	25.7
92.5°	20.5	21.7	22.8	23.4	23.5	23.6	23.7	23.8
95°	21.2	22.4	23.5	24.2	24.4	24.5	24.7	24.9
97.5°	22.9	23.1	23.2	23.3	23.5	23.7	23.8	24.1
100°	31.3	28.1	24.8	23.3	23.5	23.7	23.8	24.1
102.5°	112.2	77.1	42.1	24.6	24.6	24.7	24.7	24.8
105°	271.6	273.3	275.0	272.5	265.6	258.7	251.8	245.0
107.5°	336.0	336.9	337.7	338.5	339.2	339.9	340.7	341.4
110°	379.8	380.2	380.6	381.1	381.6	382.2	382.8	383.3



TEST NUMBER: P332658-935

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	422.2	422.1	422.1	422.4	423.1	423.9	424.6	425.2
115°	485.5	485.9	486.3	486.5	486.5	486.5	486.5	486.5
117.5°	549.2	549.1	549.1	549.1	549.0	548.9	548.8	548.7
120°	588.7	589.0	589.4	589.4	589.0	588.7	588.3	587.9
122.5°	627.6	627.8	628.0	627.9	627.6	627.2	626.8	626.4
125°	681.9	682.4	683.0	683.4	683.6	683.8	684.0	684.2
127.5°	735.9	735.7	735.6	735.5	735.4	735.2	735.0	734.9
130°	768.8	769.0	769.1	769.3	769.3	769.3	769.3	769.3
132.5°	801.1	801.3	801.5	801.5	801.3	801.2	801.1	800.9
135°	845.7	846.0	846.4	846.8	847.2	847.6	847.9	848.3
137.5°	888.4	888.8	889.2	889.3	889.2	889.2	889.0	888.9
140°	914.8	915.4	915.9	916.4	916.5	916.7	916.9	917.1
142.5°	939.3	939.7	940.1	940.3	940.4	940.4	940.5	940.5
145°	974.2	974.4	974.6	974.9	975.3	975.6	976.0	976.4
147.5°	1004.9	1005.0	1005.2	1005.4	1005.6	1005.7	1006.0	1006.2
150°	1024.5	1024.5	1024.5	1024.6	1024.8	1025.0	1025.2	1025.4
152.5°	1041.6	1042.0	1042.2	1042.3	1042.2	1042.2	1042.0	1041.9
155°	1064.7	1065.5	1066.3	1066.3	1065.8	1065.2	1064.6	1064.1
157.5°	1084.6	1085.6	1086.6	1086.6	1085.6	1084.6	1083.7	1082.6
160°	1097.3	1098.5	1099.6	1099.6	1098.5	1097.3	1096.1	1095.0
162.5°	1107.6	1108.8	1109.9	1109.8	1108.5	1107.2	1106.0	1104.7
165°	1122.1	1123.7	1125.2	1125.1	1123.3	1121.6	1119.9	1118.2
167.5°	1132.7	1134.5	1136.1	1136.0	1134.1	1132.2	1130.2	1128.3
170°	1139.4	1140.8	1142.4	1142.2	1140.3	1138.4	1136.4	1134.5
172.5°	1143.5	1145.0	1146.5	1146.2	1144.2	1142.1	1140.1	1138.0
175°	1148.3	1150.0	1151.8	1151.4	1149.2	1146.9	1144.6	1142.3
177.5°	1150.2	1151.4	1152.7	1152.4	1150.6	1148.7	1146.9	1145.0
180°	1149.2	1149.2	1149.2	1149.2	1149.2	1149.2	1149.2	1149.2

(END OF REPORT)