

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: P332237-927

Luminaire Tested: **S123DIW-S1165D1535U927-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332237-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S1165D1535U927-4F0-1E-UDD-D1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8059.2 lumens  
Efficiency: N/A  
Efficacy: 97.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

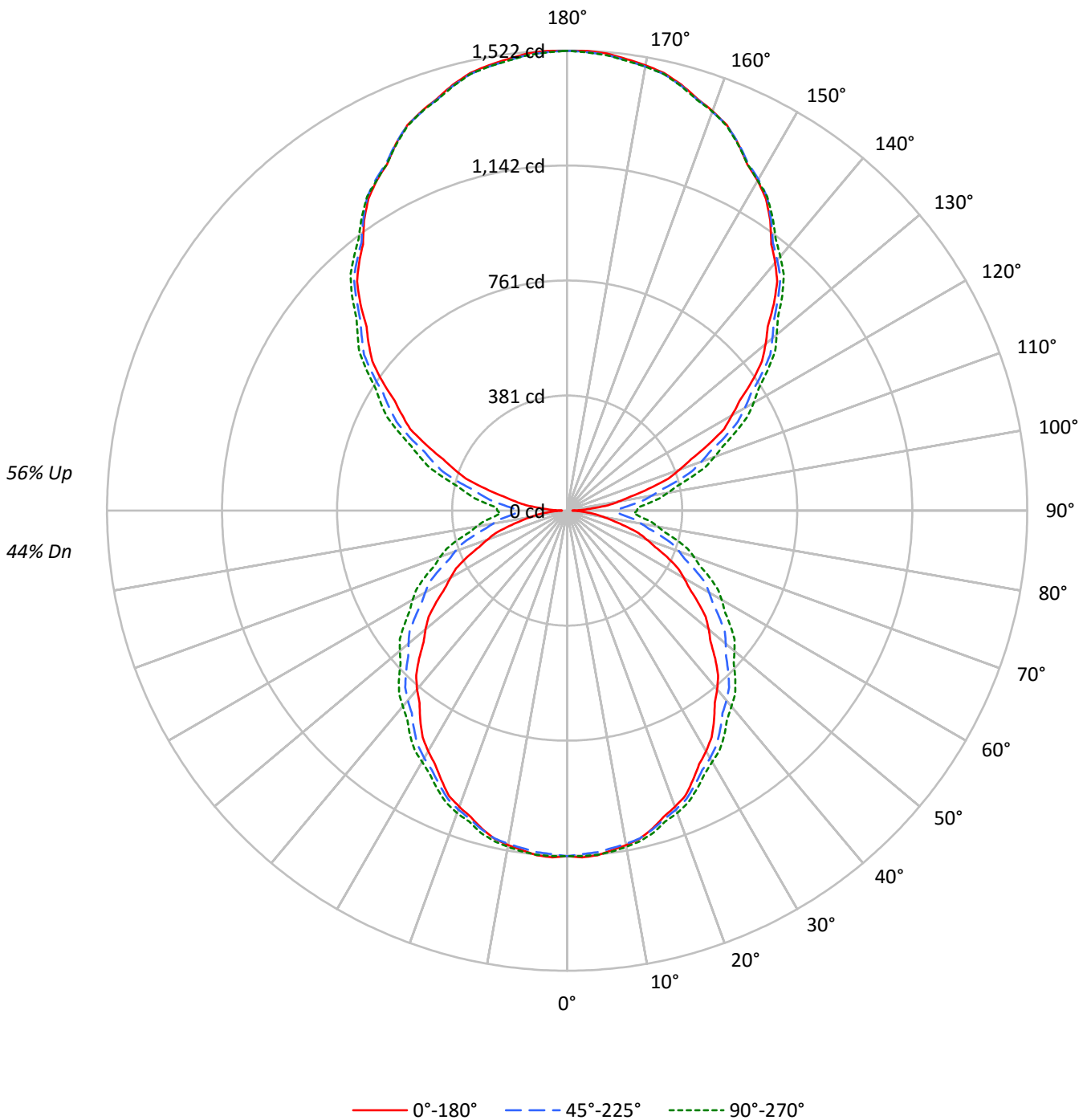
Input Watts (W): 82.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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		64	64	64		50	50	50	44
1	95	91	87	83	87	83	79	76	69	66	64		55	53	52		43	42	41	35
2	87	79	72	67	79	72	66	62	60	55	52		48	45	42		37	35	34	29
3	79	69	61	55	72	63	56	51	52	47	43		42	39	36		33	30	28	24
4	72	61	53	46	65	56	49	43	46	41	37		37	33	30		29	26	24	20
5	66	54	46	40	60	50	42	37	41	36	31		33	29	26		26	23	21	17
6	61	48	40	34	55	44	37	32	37	31	27		30	26	23		24	21	18	15
7	56	43	35	30	51	40	33	28	33	28	24		27	23	20		22	18	16	13
8	52	39	32	26	47	36	29	24	30	25	21		25	21	18		20	17	14	12
9	48	36	28	23	44	33	26	22	28	22	19		23	19	16		18	15	13	11
10	45	33	26	21	41	30	24	19	26	20	17		21	17	14		17	14	12	10

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	12304	12304	12304
5°	12343	11994	12001
10°	12232	11718	11659
15°	12075	11405	11287
20°	11849	11047	10876
25°	11571	10634	10444
30°	11287	10264	10006
35°	10967	9871	9658
40°	10663	9514	9284
45°	10325	9172	8985
50°	9990	8832	8655
55°	9622	8486	8359
60°	9263	8134	8056
65°	8896	7758	7694
70°	8341	7336	7323
75°	7640	6853	6946
80°	6835	6380	6515
85°	6085	6053	6268



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	108.4	1.3
10°-20°	308.9	3.8
20°-30°	462.0	5.7
30°-40°	551.8	6.8
40°-50°	577.3	7.2
50°-60°	541.7	6.7
60°-70°	452.5	5.6
70°-80°	323.7	4.0
80°-90°	197.6	2.5
90°-100°	220.2	2.7
100°-110°	385.5	4.8
110°-120°	563.8	7.0
120°-130°	697.3	8.7
130°-140°	760.8	9.4
140°-150°	736.2	9.1
150°-160°	617.0	7.7
160°-170°	410.7	5.1
170°-180°	143.8	1.8
0°-30°	879.3	10.9
0°-40°	1431.1	17.8
0°-60°	2550.1	31.6
0°-90°	3523.8	43.7
90°-120°	1169.5	14.5
90°-150°	3363.8	41.7
90°-180°	4535.0	56.3
0°-180°	8059.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1143	1143	1143	1143	1143	
5°	1144	1142	1134	1144	1143	108
15°	1090	1093	1092	1104	1103	307
25°	984	996	1000	1015	1016	453
35°	847	866	883	901	906	529
45°	692	722	753	776	787	534
55°	528	569	614	646	658	473
65°	365	414	468	504	518	360
75°	198	257	319	358	375	212
85°	61	124	189	230	244	64
90°	17	91	169	215	231	15
95°	84	142	212	253	268	90
105°	279	313	375	409	424	298
115°	514	534	575	605	615	509
125°	747	752	784	804	809	666
135°	966	973	985	1002	1006	745
145°	1171	1172	1175	1184	1184	731
155°	1339	1339	1340	1344	1337	616
165°	1459	1455	1455	1461	1454	411
175°	1517	1513	1512	1519	1511	144
180°	1521	1521	1521	1521	1521	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1
2.5°	1148.1	1147.5	1146.8	1146.1	1145.4	1144.2	1142.5	1140.7	1138.9	1137.2	1138.9
5°	1144.4	1143.8	1143.3	1142.7	1142.2	1141.1	1139.4	1137.7	1136.1	1134.4	1136.6
7.5°	1133.1	1133.3	1133.4	1133.5	1133.6	1132.9	1131.2	1129.7	1128.1	1126.4	1129.2
10°	1123.2	1123.8	1124.3	1124.9	1125.5	1125.0	1123.6	1122.2	1120.9	1119.4	1122.2
12.5°	1111.3	1112.0	1112.8	1113.6	1114.4	1114.3	1113.3	1112.4	1111.4	1110.5	1113.0
15°	1089.6	1090.4	1091.2	1092.1	1092.9	1093.2	1092.9	1092.7	1092.3	1092.1	1094.9
17.5°	1062.2	1063.8	1065.5	1067.1	1068.8	1069.6	1069.5	1069.4	1069.3	1069.1	1071.7
20°	1042.3	1043.9	1045.6	1047.3	1048.9	1050.0	1050.6	1051.1	1051.7	1052.3	1054.7
22.5°	1021.4	1023.0	1024.7	1026.4	1028.0	1029.2	1030.0	1030.8	1031.5	1032.3	1035.5
25°	983.7	986.5	989.3	992.0	994.8	996.6	997.4	998.2	999.1	999.9	1003.5
27.5°	945.9	949.0	952.2	955.4	958.5	961.0	962.7	964.5	966.3	968.0	971.1
30°	919.0	922.6	926.1	929.8	933.3	936.3	938.5	940.7	942.9	945.2	948.5
32.5°	889.1	893.1	897.1	901.2	905.2	908.7	911.6	914.5	917.3	920.2	923.8
35°	846.8	851.2	855.6	860.1	864.5	868.5	872.1	875.7	879.2	882.9	887.0
37.5°	801.9	806.9	811.9	816.9	821.9	826.6	831.0	835.4	839.9	844.3	849.0
40°	772.1	777.1	782.0	787.0	791.9	797.3	802.8	808.3	813.8	819.4	824.1
42.5°	739.2	745.3	751.4	757.4	763.5	769.4	775.2	780.9	786.7	792.5	797.6
45°	692.4	699.0	705.6	712.3	718.9	725.7	732.6	739.5	746.5	753.4	758.6
47.5°	643.3	650.8	658.3	665.9	673.4	681.1	689.0	697.0	704.9	712.8	718.7
50°	611.4	619.2	626.9	634.6	642.4	650.5	659.2	667.7	676.3	684.8	691.3
52.5°	577.6	585.7	593.9	602.1	610.3	619.2	628.6	638.0	647.5	657.0	663.6
55°	528.0	537.1	546.2	555.4	564.5	574.0	584.0	594.0	604.0	613.9	621.4
57.5°	479.7	489.2	498.7	508.2	517.8	528.0	538.8	549.8	560.6	571.6	579.1
60°	445.8	455.7	465.7	475.7	485.6	496.3	507.6	519.0	530.4	541.7	549.5
62.5°	413.9	424.1	434.3	444.5	454.6	465.7	477.8	489.7	501.8	513.8	521.5
65°	364.9	375.7	386.4	397.2	408.1	419.5	431.7	443.9	456.1	468.2	476.5
67.5°	315.1	326.5	337.9	349.4	360.8	372.8	385.2	397.6	410.0	422.4	431.4
70°	280.2	292.1	304.0	315.8	327.8	340.4	353.6	366.9	380.2	393.5	402.3
72.5°	248.3	260.2	272.1	284.0	295.9	308.7	322.4	336.1	349.9	363.6	372.7
75°	198.0	211.0	224.0	237.0	250.0	263.4	277.3	291.1	304.9	318.8	327.9
77.5°	154.2	167.3	180.4	193.5	206.6	220.1	234.1	248.0	262.0	275.9	285.6
80°	123.3	136.8	150.4	164.0	177.5	191.5	205.9	220.3	234.6	249.1	258.5
82.5°	96.4	110.2	124.0	137.8	151.5	165.7	180.3	195.0	209.5	224.1	233.5
85°	61.0	74.9	88.7	102.5	116.4	130.6	145.3	159.9	174.6	189.3	198.7
87.5°	33.4	47.7	61.9	76.3	90.6	105.2	119.9	134.8	149.6	164.4	174.0
90°	17.3	33.6	49.8	66.0	82.2	99.1	116.7	134.3	151.8	169.4	179.8
92.5°	44.1	58.1	72.2	86.2	100.2	115.2	131.0	146.9	162.8	178.6	188.6
95°	84.2	96.8	109.5	122.2	134.8	148.9	164.6	180.3	196.0	211.7	221.3
97.5°	137.4	148.5	159.6	170.8	181.9	194.7	209.1	223.6	238.1	252.6	262.1
100°	173.6	184.1	194.6	205.0	215.5	227.7	241.8	255.8	269.9	283.9	292.8
102.5°	215.7	224.6	233.5	242.5	251.4	263.0	277.3	291.5	305.8	320.0	328.6
105°	278.8	285.9	293.1	300.2	307.4	318.1	332.5	346.7	361.0	375.3	383.0
107.5°	350.9	356.8	362.7	368.8	374.7	383.8	396.0	408.3	420.5	432.8	441.0
110°	395.7	401.2	406.7	412.3	417.7	426.3	437.9	449.5	461.1	472.7	480.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	443.5	447.9	452.3	456.7	461.1	468.7	479.4	490.2	500.9	511.7	519.9
115°	513.9	518.0	522.1	526.2	530.4	537.2	546.6	556.0	565.5	574.9	581.8
117.5°	585.8	588.4	591.0	593.6	596.1	601.7	610.5	619.1	627.7	636.4	642.9
120°	629.7	632.7	635.7	638.7	641.7	647.1	654.8	662.7	670.4	678.3	684.4
122.5°	676.6	678.4	680.3	682.2	684.1	689.0	697.0	705.0	713.0	721.0	726.5
125°	746.8	747.6	748.4	749.2	750.0	754.1	761.6	769.1	776.6	784.1	788.8
127.5°	812.7	814.1	815.6	817.0	818.4	822.1	828.1	834.2	840.3	846.4	850.3
130°	856.7	858.5	860.4	862.2	864.0	867.4	872.1	876.8	881.5	886.3	890.5
132.5°	899.6	901.7	903.7	905.9	907.9	910.9	914.7	918.5	922.4	926.2	930.0
135°	966.5	967.8	969.2	970.4	971.8	973.8	976.6	979.4	982.1	984.9	988.9
137.5°	1028.4	1029.5	1030.5	1031.7	1032.8	1034.6	1037.0	1039.3	1041.8	1044.2	1047.4
140°	1070.4	1071.7	1073.0	1074.4	1075.7	1076.9	1078.0	1079.1	1080.2	1081.2	1085.2
142.5°	1109.5	1110.6	1111.7	1112.9	1114.0	1114.8	1115.5	1116.2	1116.8	1117.5	1120.9
145°	1170.8	1171.0	1171.2	1171.5	1171.7	1172.3	1173.1	1173.9	1174.6	1175.4	1177.4
147.5°	1223.0	1223.9	1224.9	1225.9	1226.9	1227.6	1228.4	1229.2	1229.9	1230.7	1231.3
150°	1260.3	1260.8	1261.3	1261.9	1262.4	1262.9	1263.5	1264.0	1264.5	1265.0	1265.0
152.5°	1290.9	1291.6	1292.4	1293.1	1293.8	1294.3	1294.7	1295.0	1295.3	1295.6	1296.1
155°	1339.1	1339.1	1339.1	1339.1	1339.1	1339.3	1339.5	1339.7	1340.1	1340.3	1341.4
157.5°	1380.2	1379.9	1379.6	1379.3	1379.0	1378.9	1379.1	1379.3	1379.5	1379.7	1380.9
160°	1406.0	1405.5	1404.9	1404.4	1403.9	1403.6	1403.6	1403.6	1403.6	1403.6	1404.9
162.5°	1428.9	1428.2	1427.4	1426.7	1426.0	1425.7	1425.9	1426.2	1426.3	1426.6	1427.9
165°	1458.6	1457.8	1457.0	1456.2	1455.4	1455.0	1455.0	1455.0	1455.0	1455.0	1456.6
167.5°	1482.3	1481.1	1480.1	1479.0	1478.0	1477.6	1477.7	1478.0	1478.2	1478.4	1480.0
170°	1495.6	1494.5	1493.5	1492.4	1491.4	1490.8	1490.8	1490.8	1490.8	1490.8	1492.7
172.5°	1506.1	1505.1	1504.0	1502.9	1501.9	1501.3	1501.3	1501.3	1501.3	1501.3	1503.0
175°	1517.1	1516.1	1515.0	1513.9	1512.8	1512.4	1512.4	1512.4	1512.4	1512.4	1513.9
177.5°	1521.6	1520.8	1520.0	1519.1	1518.2	1517.8	1517.8	1517.8	1517.8	1517.8	1519.1
180°	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1
2.5°	1140.7	1142.5	1144.2	1145.0	1144.8	1144.5	1144.3	1144.1
5°	1138.8	1141.1	1143.3	1144.2	1144.0	1143.7	1143.4	1143.1
7.5°	1131.9	1134.7	1137.5	1138.8	1138.4	1138.0	1137.7	1137.4
10°	1125.0	1127.8	1130.5	1131.6	1131.1	1130.5	1130.0	1129.4
12.5°	1115.6	1118.2	1120.7	1121.7	1121.1	1120.5	1120.0	1119.4
15°	1097.6	1100.3	1103.1	1104.4	1104.1	1103.8	1103.6	1103.3
17.5°	1074.1	1076.7	1079.1	1080.1	1079.8	1079.4	1079.0	1078.6
20°	1057.2	1059.7	1062.2	1063.6	1063.8	1064.1	1064.4	1064.7
22.5°	1038.6	1041.8	1044.9	1046.4	1046.2	1046.1	1045.9	1045.8
25°	1007.1	1010.7	1014.3	1016.1	1016.1	1016.1	1016.1	1016.1
27.5°	974.2	977.3	980.4	982.1	982.3	982.5	982.8	983.0
30°	951.8	955.1	958.4	960.0	960.0	960.0	960.0	960.0
32.5°	927.3	930.9	934.4	936.5	937.2	937.9	938.5	939.1
35°	891.2	895.3	899.4	902.1	903.2	904.4	905.5	906.5
37.5°	853.7	858.4	863.1	865.9	866.8	867.7	868.5	869.4
40°	828.8	833.5	838.2	841.1	842.2	843.3	844.4	845.5
42.5°	802.8	807.9	813.1	816.4	817.9	819.5	821.0	822.6
45°	763.9	769.1	774.4	778.2	780.4	782.6	784.8	787.0
47.5°	724.6	730.6	736.5	740.3	742.0	743.7	745.4	747.1
50°	697.6	704.0	710.3	714.5	716.4	718.4	720.3	722.2
52.5°	670.2	676.8	683.3	687.9	690.2	692.6	695.0	697.4
55°	628.8	636.3	643.8	648.6	650.9	653.1	655.3	657.5
57.5°	586.6	594.1	601.7	606.7	609.3	612.0	614.6	617.1
60°	557.1	564.9	572.7	578.1	581.1	584.2	587.2	590.3
62.5°	529.3	537.0	544.8	550.1	552.9	555.7	558.6	561.3
65°	484.8	493.1	501.5	506.9	509.7	512.5	515.2	518.0
67.5°	440.5	449.6	458.7	464.4	466.8	469.1	471.3	473.7
70°	411.2	420.1	428.9	434.7	437.5	440.3	443.0	445.8
72.5°	381.8	390.9	399.9	405.8	408.6	411.4	414.2	416.9
75°	337.1	346.2	355.3	361.6	364.9	368.2	371.5	374.8
77.5°	295.2	304.8	314.5	320.5	323.1	325.7	328.2	330.7
80°	267.8	277.3	286.7	292.8	295.6	298.3	301.1	303.8
82.5°	243.0	252.4	261.7	267.8	270.6	273.4	276.2	278.9
85°	208.1	217.5	226.9	233.0	235.8	238.5	241.3	244.1
87.5°	183.6	193.2	202.9	209.1	212.0	214.8	217.7	220.6
90°	190.4	200.8	211.3	218.2	221.4	224.7	228.1	231.3
92.5°	198.7	208.7	218.7	224.9	227.1	229.3	231.6	233.8
95°	230.9	240.6	250.3	256.4	259.2	262.0	264.7	267.5
97.5°	271.6	281.1	290.5	296.6	299.2	301.9	304.6	307.2
100°	301.6	310.4	319.2	325.3	328.6	331.8	335.2	338.5
102.5°	337.2	345.8	354.4	360.0	362.7	365.4	368.0	370.7
105°	390.8	398.5	406.3	411.7	414.7	417.7	420.7	423.7
107.5°	449.3	457.6	465.8	471.0	473.2	475.2	477.4	479.5
110°	489.3	497.5	505.7	510.7	512.4	514.0	515.8	517.5





TEST NUMBER: P332237-927

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	528.1	536.4	544.6	549.9	552.2	554.6	556.9	559.2
115°	588.7	595.6	602.5	607.0	608.9	610.9	612.8	614.7
117.5°	649.5	656.0	662.5	666.5	667.9	669.3	670.7	672.2
120°	690.5	696.6	702.7	706.4	707.8	709.2	710.6	712.0
122.5°	732.0	737.4	742.8	746.2	747.4	748.6	749.8	751.0
125°	793.5	798.3	803.0	805.9	806.8	807.6	808.5	809.4
127.5°	854.4	858.3	862.3	864.7	865.3	865.9	866.6	867.3
130°	894.7	898.9	903.1	905.1	904.9	904.7	904.5	904.3
132.5°	933.7	937.5	941.3	943.4	943.8	944.3	944.8	945.2
135°	992.8	996.7	1000.6	1003.0	1003.9	1004.7	1005.5	1006.4
137.5°	1050.7	1053.9	1057.2	1059.0	1059.4	1059.8	1060.2	1060.5
140°	1089.1	1093.0	1096.9	1098.5	1098.0	1097.6	1097.1	1096.6
142.5°	1124.3	1127.8	1131.2	1132.9	1132.8	1132.8	1132.7	1132.7
145°	1179.3	1181.3	1183.3	1184.2	1184.3	1184.3	1184.4	1184.4
147.5°	1232.0	1232.6	1233.3	1233.3	1232.7	1232.2	1231.5	1231.0
150°	1265.0	1265.0	1265.0	1264.6	1263.5	1262.4	1261.4	1260.4
152.5°	1296.5	1296.9	1297.4	1296.9	1295.6	1294.3	1293.1	1291.8
155°	1342.4	1343.5	1344.6	1344.2	1342.3	1340.5	1338.6	1336.7
157.5°	1382.0	1383.1	1384.2	1384.0	1382.5	1381.0	1379.5	1378.1
160°	1406.3	1407.6	1408.9	1409.1	1408.0	1406.9	1405.9	1404.8
162.5°	1429.2	1430.5	1431.9	1431.7	1430.0	1428.3	1426.6	1424.9
165°	1458.2	1459.8	1461.3	1461.3	1459.4	1457.5	1455.6	1453.8
167.5°	1481.7	1483.4	1484.9	1484.9	1483.4	1481.7	1480.0	1478.4
170°	1494.5	1496.4	1498.3	1498.3	1496.4	1494.5	1492.7	1490.8
172.5°	1504.6	1506.3	1507.9	1507.8	1505.9	1504.1	1502.2	1500.4
175°	1515.5	1517.1	1518.7	1518.5	1516.7	1514.8	1513.0	1511.2
177.5°	1520.4	1521.6	1522.9	1522.8	1521.3	1519.8	1518.4	1516.9
180°	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7	1520.7

(END OF REPORT)