

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: P332086-935

Luminaire Tested: **S123DIP-S1165D1195U935-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332086-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S1165D1195U935-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1195 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7896.9 lumens  
Efficiency: N/A  
Efficacy: 110.1 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

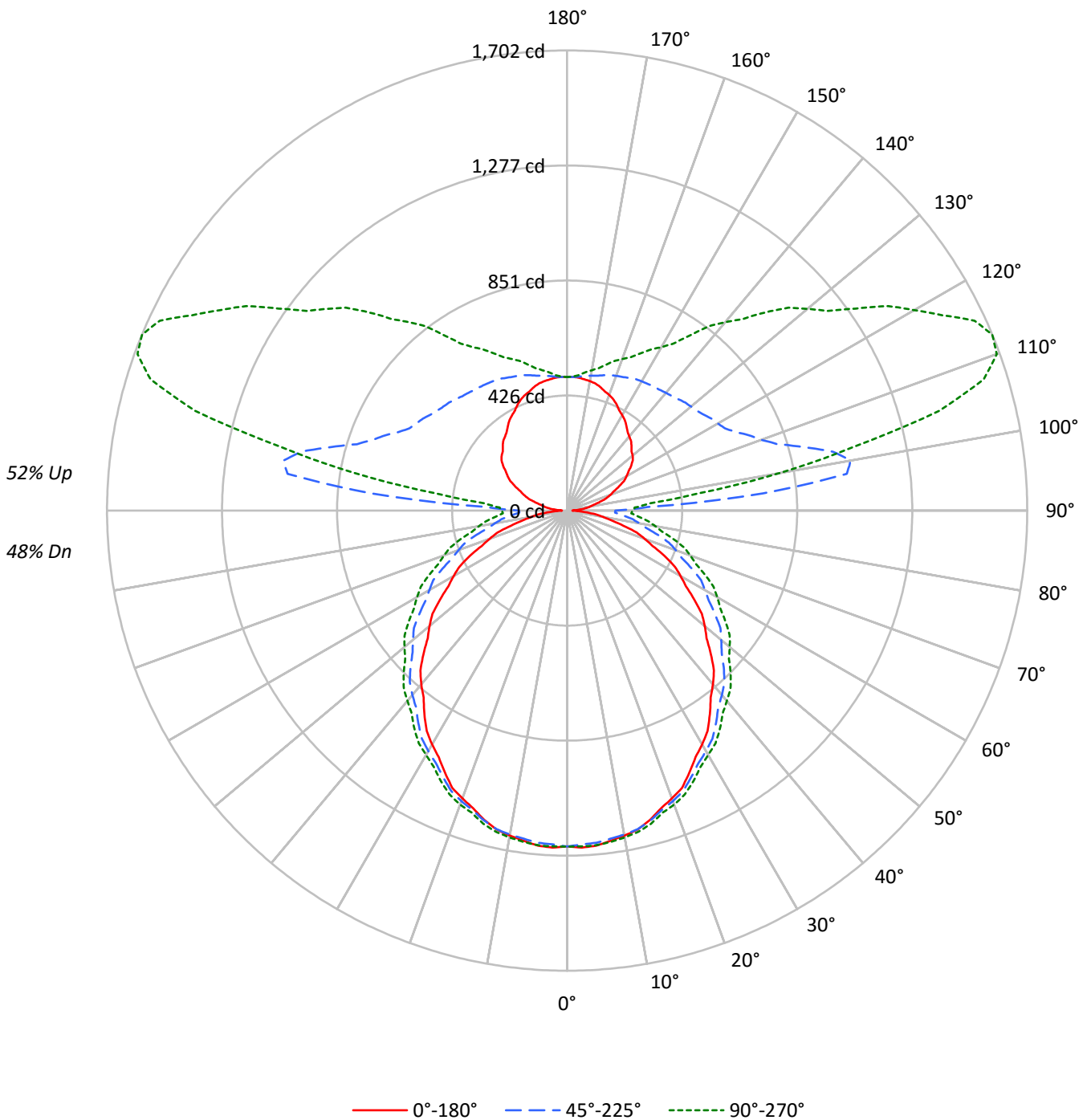
Input Watts (W): 71.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	107	107	107	98	98	98	98	82	82	82	68	68	68	55	55	55	48
1	96	92	87	84	88	84	81	77	71	68	66	58	56	55	47	45	44	39
2	87	79	73	67	80	73	67	63	61	57	53	51	47	45	41	38	36	32
3	79	69	62	56	73	64	57	52	54	49	45	44	41	37	36	33	31	26
4	73	61	53	47	66	57	49	44	48	42	38	39	35	32	32	29	26	22
5	66	54	46	40	61	50	43	37	42	37	32	35	31	27	28	25	23	19
6	61	49	40	34	56	45	38	32	38	32	28	32	27	24	26	22	20	17
7	56	44	36	30	52	41	33	28	35	29	25	29	24	21	23	20	17	15
8	52	40	32	26	48	37	30	25	31	26	22	26	22	19	21	18	16	13
9	49	36	29	24	45	34	27	22	29	23	19	24	20	17	20	16	14	12
10	45	33	26	21	42	31	24	20	26	21	17	22	18	15	18	15	13	11

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

	0°	45°	90°
0°	13373	13373	13373
5°	13415	13037	13044
10°	13294	12736	12672
15°	13123	12396	12267
20°	12878	12006	11821
25°	12576	11558	11352
30°	12267	11155	10876
35°	11919	10728	10496
40°	11588	10340	10090
45°	11221	9968	9765
50°	10858	9599	9408
55°	10459	9224	9085
60°	10067	8841	8755
65°	9669	8433	8362
70°	9064	7974	7959
75°	8304	7449	7549
80°	7429	6933	7081
85°	6613	6577	6812



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	117.8	1.5
10°-20°	335.7	4.3
20°-30°	502.2	6.4
30°-40°	599.7	7.6
40°-50°	627.4	7.9
50°-60°	588.8	7.5
60°-70°	491.8	6.2
70°-80°	351.8	4.5
80°-90°	213.6	2.7
90°-100°	406.7	5.1
100°-110°	875.5	11.1
110°-120°	830.7	10.5
120°-130°	647.9	8.2
130°-140°	498.3	6.3
140°-150°	363.1	4.6
150°-160°	250.7	3.2
160°-170°	147.2	1.9
170°-180°	47.9	0.6
0°-30°	955.7	12.1
0°-40°	1555.4	19.7
0°-60°	2771.6	35.1
0°-90°	3828.9	48.5
90°-120°	2112.8	26.8
90°-150°	3622.2	45.9
90°-180°	4068.0	51.5
0°-180°	7896.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1242	1242	1242	1242	1242	
5°	1244	1241	1233	1243	1242	118
15°	1184	1188	1187	1200	1199	333
25°	1069	1082	1087	1103	1104	492
35°	920	942	960	979	985	575
45°	752	785	819	844	855	580
55°	574	619	667	702	715	514
65°	397	450	509	548	563	392
75°	215	279	346	390	407	230
85°	66	134	206	250	265	70
90°	20	96	178	225	242	14
95°	49	179	727	347	306	48
105°	127	216	906	1544	1424	134
115°	212	280	687	1452	1663	210
125°	289	343	618	1111	1302	257
135°	337	401	582	896	1037	260
145°	382	437	559	713	790	239
155°	433	467	541	615	641	199
165°	473	487	518	550	559	133
175°	493	494	497	504	503	47
180°	494	494	494	494	494	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4
2.5°	1247.8	1247.2	1246.4	1245.7	1244.9	1243.6	1241.7	1239.8	1237.9	1236.0	1237.9
5°	1243.8	1243.2	1242.6	1242.0	1241.4	1240.2	1238.4	1236.6	1234.8	1233.0	1235.4
7.5°	1231.6	1231.7	1231.8	1232.0	1232.1	1231.3	1229.5	1227.8	1226.1	1224.3	1227.3
10°	1220.8	1221.4	1222.0	1222.6	1223.2	1222.7	1221.2	1219.7	1218.2	1216.7	1219.7
12.5°	1207.8	1208.6	1209.4	1210.3	1211.2	1211.1	1210.0	1209.0	1208.0	1206.9	1209.7
15°	1184.2	1185.2	1186.0	1187.0	1187.8	1188.2	1187.8	1187.6	1187.2	1187.0	1190.0
17.5°	1154.4	1156.2	1158.0	1159.9	1161.7	1162.5	1162.4	1162.3	1162.2	1162.0	1164.8
20°	1132.8	1134.6	1136.4	1138.2	1140.1	1141.3	1141.9	1142.5	1143.1	1143.7	1146.3
22.5°	1110.1	1111.9	1113.7	1115.5	1117.3	1118.6	1119.5	1120.3	1121.1	1122.0	1125.4
25°	1069.2	1072.2	1075.2	1078.2	1081.2	1083.1	1084.1	1084.9	1085.9	1086.8	1090.7
27.5°	1028.0	1031.5	1034.9	1038.4	1041.7	1044.5	1046.4	1048.3	1050.2	1052.1	1055.5
30°	998.8	1002.7	1006.6	1010.6	1014.4	1017.6	1020.0	1022.4	1024.8	1027.3	1030.9
32.5°	966.3	970.7	975.1	979.5	983.9	987.7	990.8	993.9	997.0	1000.1	1004.0
35°	920.3	925.1	930.0	934.8	939.6	943.9	947.9	951.7	955.6	959.6	964.1
37.5°	871.6	877.0	882.4	887.9	893.3	898.4	903.2	908.0	912.8	917.7	922.7
40°	839.1	844.6	850.0	855.3	860.7	866.5	872.5	878.5	884.5	890.5	895.7
42.5°	803.4	810.0	816.7	823.2	829.8	836.3	842.6	848.8	855.1	861.3	866.9
45°	752.5	759.7	766.9	774.1	781.4	788.8	796.3	803.7	811.3	818.8	824.5
47.5°	699.1	707.3	715.5	723.8	731.9	740.3	748.9	757.5	766.1	774.7	781.1
50°	664.5	673.0	681.4	689.7	698.2	707.1	716.4	725.7	735.0	744.3	751.3
52.5°	627.8	636.6	645.5	654.4	663.3	673.0	683.2	693.4	703.8	714.0	721.3
55°	573.9	583.8	593.7	603.6	613.5	623.9	634.7	645.6	656.4	667.3	675.4
57.5°	521.3	531.7	542.0	552.3	562.7	573.9	585.7	597.5	609.3	621.2	629.4
60°	484.5	495.3	506.2	517.0	527.8	539.4	551.7	564.0	576.4	588.8	597.2
62.5°	449.9	461.0	472.0	483.1	494.1	506.2	519.3	532.3	545.4	558.4	566.8
65°	396.6	408.3	420.0	431.7	443.5	456.0	469.2	482.4	495.7	508.9	517.9
67.5°	342.4	354.9	367.3	379.8	392.2	405.2	418.6	432.1	445.6	459.1	468.9
70°	304.5	317.5	330.4	343.3	356.3	370.0	384.4	398.8	413.3	427.7	437.3
72.5°	269.8	282.8	295.8	308.7	321.6	335.5	350.4	365.3	380.3	395.2	405.1
75°	215.2	229.4	243.5	257.6	271.7	286.3	301.4	316.4	331.4	346.5	356.4
77.5°	167.6	181.8	196.0	210.3	224.5	239.3	254.4	269.6	284.7	299.9	310.4
80°	134.0	148.7	163.5	178.2	193.0	208.1	223.8	239.4	255.0	270.7	280.9
82.5°	104.8	119.8	134.7	149.7	164.6	180.1	196.0	211.9	227.7	243.6	253.8
85°	66.3	81.4	96.4	111.4	126.5	142.0	157.9	173.8	189.8	205.7	215.9
87.5°	36.4	51.7	67.2	82.7	98.2	113.7	129.6	145.5	161.5	177.5	187.4
90°	19.6	36.3	53.0	70.8	87.6	104.6	123.0	141.3	159.6	178.0	187.2
92.5°	28.9	48.2	69.9	91.0	112.7	141.7	183.0	241.1	298.4	298.2	270.3
95°	48.9	63.6	86.4	115.1	152.8	205.1	304.9	468.6	647.5	727.2	624.5
97.5°	71.3	82.8	102.0	127.4	163.7	218.2	313.5	495.6	783.2	1043.5	1116.7
100°	86.2	96.9	113.5	137.1	170.7	221.4	305.3	467.2	744.2	1065.1	1270.8
102.5°	101.9	112.4	127.3	149.1	179.4	226.4	302.7	442.0	689.8	1006.6	1272.1
105°	126.8	137.1	150.3	169.5	195.8	236.9	303.8	419.7	621.7	905.8	1201.3
107.5°	152.1	161.2	173.1	191.1	215.0	253.0	312.7	410.6	575.3	815.9	1084.6
110°	170.2	178.6	189.0	205.4	227.8	264.6	321.6	409.7	555.8	764.8	1011.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	187.8	195.3	204.7	220.2	241.6	276.8	330.2	412.2	541.7	728.0	946.6
115°	211.8	219.5	229.0	242.7	263.3	297.5	346.4	418.2	531.1	686.9	867.2
117.5°	236.9	243.8	251.1	262.4	283.7	314.9	362.7	427.2	524.1	658.2	815.1
120°	253.5	258.0	264.5	276.0	296.5	327.3	373.2	435.1	522.1	644.0	787.0
122.5°	268.7	272.5	278.3	289.9	308.8	340.6	385.2	442.7	522.7	633.0	762.9
125°	289.1	291.2	297.1	308.2	327.2	358.5	402.3	455.0	523.7	617.5	730.9
127.5°	305.7	308.5	315.6	326.5	347.2	377.6	418.7	465.5	526.8	605.8	701.5
130°	316.2	318.8	327.6	339.2	360.0	389.9	428.9	472.9	528.9	598.0	684.8
132.5°	323.0	326.8	336.6	350.9	371.9	400.5	437.5	479.5	529.5	591.8	668.7
135°	336.8	340.5	351.2	365.9	386.7	415.2	449.4	486.8	530.1	582.5	646.9
137.5°	349.7	353.7	364.3	380.0	400.6	426.5	458.1	492.4	529.9	573.8	627.9
140°	357.5	362.5	372.5	388.5	408.5	433.9	463.9	494.8	529.7	568.6	616.1
142.5°	367.0	371.0	381.6	395.8	415.5	438.9	467.3	496.7	528.5	562.7	604.9
145°	382.5	385.2	393.9	408.6	425.3	448.2	474.2	501.2	529.2	559.2	593.6
147.5°	396.7	398.6	407.3	420.3	436.8	456.3	480.2	504.4	529.2	555.4	583.5
150°	407.2	408.1	416.1	429.1	443.2	461.2	484.1	505.1	529.2	552.2	577.2
152.5°	417.6	417.8	425.8	437.1	449.5	466.7	486.6	506.8	526.8	548.2	570.8
155°	433.2	433.2	439.2	449.2	460.1	474.2	491.2	507.2	524.2	541.2	561.2
157.5°	445.6	446.3	451.2	459.9	469.3	480.2	493.8	508.2	520.8	535.0	550.4
160°	455.1	455.1	459.2	467.2	474.2	484.1	496.2	508.2	519.2	530.2	543.2
162.5°	462.4	462.4	465.5	472.0	478.2	486.6	497.0	507.4	516.0	525.4	536.0
165°	473.2	472.2	474.2	479.1	483.2	490.2	498.2	505.1	511.2	518.1	526.2
167.5°	481.4	480.2	481.1	485.0	487.8	492.1	498.0	503.6	506.4	511.0	516.8
170°	486.2	484.1	485.2	488.2	490.2	492.1	497.1	501.2	503.2	506.2	511.2
172.5°	489.4	488.2	488.4	490.6	491.8	493.0	497.1	500.4	500.8	502.1	505.6
175°	493.2	492.1	491.2	493.2	493.2	494.2	496.2	498.2	497.1	497.1	499.2
177.5°	495.0	494.2	493.4	494.2	494.2	494.2	495.0	496.5	495.0	494.2	495.0
180°	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4	1242.4
2.5°	1239.8	1241.7	1243.6	1244.5	1244.2	1244.0	1243.7	1243.5
5°	1237.8	1240.2	1242.6	1243.6	1243.4	1243.0	1242.8	1242.4
7.5°	1230.3	1233.3	1236.3	1237.7	1237.3	1236.9	1236.6	1236.2
10°	1222.7	1225.7	1228.7	1229.9	1229.3	1228.7	1228.1	1227.5
12.5°	1212.5	1215.3	1218.1	1219.1	1218.5	1217.9	1217.3	1216.7
15°	1192.9	1195.9	1198.9	1200.3	1200.1	1199.7	1199.5	1199.1
17.5°	1167.4	1170.2	1172.9	1174.0	1173.6	1173.2	1172.8	1172.3
20°	1149.0	1151.8	1154.4	1156.0	1156.2	1156.6	1156.8	1157.2
22.5°	1128.9	1132.3	1135.7	1137.3	1137.1	1137.0	1136.8	1136.6
25°	1094.6	1098.5	1102.4	1104.4	1104.4	1104.4	1104.4	1104.4
27.5°	1058.9	1062.2	1065.6	1067.4	1067.6	1067.9	1068.2	1068.4
30°	1034.5	1038.1	1041.6	1043.4	1043.4	1043.4	1043.4	1043.4
32.5°	1007.9	1011.8	1015.5	1017.9	1018.6	1019.3	1020.0	1020.7
35°	968.6	973.1	977.6	980.5	981.7	982.9	984.1	985.2
37.5°	927.8	933.0	938.1	941.1	942.1	943.1	944.0	944.9
40°	900.8	905.9	911.0	914.1	915.3	916.5	917.7	918.9
42.5°	872.5	878.1	883.7	887.3	889.0	890.7	892.3	894.1
45°	830.3	835.9	841.7	845.8	848.2	850.6	853.0	855.3
47.5°	787.6	794.0	800.5	804.6	806.4	808.3	810.2	812.0
50°	758.2	765.2	772.1	776.5	778.7	780.8	782.9	785.0
52.5°	728.4	735.6	742.7	747.6	750.2	752.8	755.4	757.9
55°	683.5	691.6	699.7	705.0	707.4	709.8	712.2	714.6
57.5°	637.6	645.8	653.9	659.4	662.3	665.1	668.0	670.7
60°	605.5	614.0	622.4	628.3	631.6	634.9	638.2	641.5
62.5°	575.2	583.7	592.1	597.9	600.9	604.0	607.1	610.1
65°	526.9	536.0	545.0	551.0	554.0	557.0	560.0	563.0
67.5°	478.8	488.7	498.5	504.7	507.3	509.8	512.3	514.9
70°	446.9	456.6	466.1	472.5	475.5	478.5	481.5	484.5
72.5°	414.9	424.8	434.6	441.1	444.1	447.1	450.1	453.1
75°	366.4	376.3	386.2	393.0	396.6	400.2	403.8	407.3
77.5°	320.8	331.3	341.8	348.4	351.2	354.0	356.7	359.5
80°	291.1	301.4	311.6	318.2	321.2	324.3	327.3	330.2
82.5°	264.1	274.3	284.5	291.1	294.1	297.1	300.1	303.2
85°	226.2	236.4	246.6	253.2	256.2	259.2	262.3	265.3
87.5°	197.9	208.3	218.7	225.8	228.6	231.8	235.0	237.8
90°	198.4	209.7	220.8	229.5	231.4	235.5	239.5	241.5
92.5°	248.5	241.1	243.2	244.4	245.4	245.1	248.9	249.9
95°	512.7	406.0	362.3	332.5	316.5	310.5	306.5	305.5
97.5°	1039.9	870.2	750.1	636.5	565.6	523.6	499.6	494.0
100°	1314.6	1242.3	1133.9	997.8	899.7	829.7	793.8	797.7
102.5°	1401.3	1407.1	1347.4	1263.1	1187.5	1132.6	1103.1	1083.1
105°	1418.8	1527.2	1554.7	1534.2	1490.9	1455.6	1426.3	1424.0
107.5°	1329.8	1500.3	1595.9	1636.9	1640.4	1630.2	1622.1	1615.5
110°	1248.6	1440.5	1574.4	1649.5	1680.0	1690.4	1690.7	1691.2





TEST NUMBER: P332086-935

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1167.3	1362.9	1511.7	1606.9	1660.7	1688.2	1698.4	1701.5
115°	1059.5	1240.8	1395.1	1508.9	1586.3	1632.8	1655.2	1662.6
117.5°	978.5	1135.9	1275.1	1390.5	1471.1	1523.8	1555.0	1564.2
120°	935.0	1076.9	1203.9	1309.5	1390.6	1448.7	1474.8	1482.9
122.5°	899.5	1028.4	1146.3	1244.6	1316.9	1369.4	1397.9	1407.6
125°	851.2	966.6	1068.9	1153.1	1219.3	1265.4	1292.5	1301.7
127.5°	808.0	911.2	1003.8	1080.6	1139.6	1179.3	1203.9	1212.4
130°	780.5	876.2	962.9	1034.7	1089.6	1127.4	1150.2	1160.0
132.5°	754.6	842.8	923.8	992.4	1044.2	1082.3	1102.9	1110.6
135°	719.3	795.7	866.2	926.7	977.1	1008.7	1028.2	1036.7
137.5°	686.9	749.8	810.6	863.2	905.9	937.8	954.5	960.6
140°	667.7	723.2	775.8	821.7	861.3	890.8	908.3	908.8
142.5°	648.8	696.6	742.3	782.5	816.3	842.7	858.6	859.1
145°	628.0	663.5	697.8	728.7	754.9	777.1	786.4	789.5
147.5°	611.2	638.2	664.7	686.2	706.3	721.6	730.3	732.2
150°	600.2	623.2	644.2	663.6	679.2	690.8	697.3	697.9
152.5°	591.4	611.2	629.8	645.7	657.6	668.0	671.7	671.8
155°	578.2	594.2	609.2	621.2	630.3	638.3	640.2	641.2
157.5°	564.2	577.6	589.2	598.6	606.4	612.4	614.0	613.8
160°	556.2	567.2	577.2	584.2	591.2	597.2	597.2	596.2
162.5°	546.6	556.0	565.2	571.4	576.0	581.2	581.2	580.2
165°	534.2	540.2	547.2	552.2	556.2	560.2	559.2	559.2
167.5°	523.4	528.0	532.0	535.6	537.4	540.2	539.2	539.2
170°	516.2	519.2	523.1	525.2	526.2	528.2	527.2	527.2
172.5°	509.8	512.0	515.2	516.3	516.6	518.6	516.8	516.0
175°	501.2	502.1	504.2	504.2	504.2	505.1	504.2	503.2
177.5°	495.8	496.5	497.4	497.4	496.5	497.4	495.8	495.8
180°	494.2	494.2	494.2	494.2	494.2	494.2	494.2	494.2

(END OF REPORT)