

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: P332166-830

Luminaire Tested: **S123DIW-S775D1030U830-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332166-830  
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-S775D1030U830-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 775 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1030 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

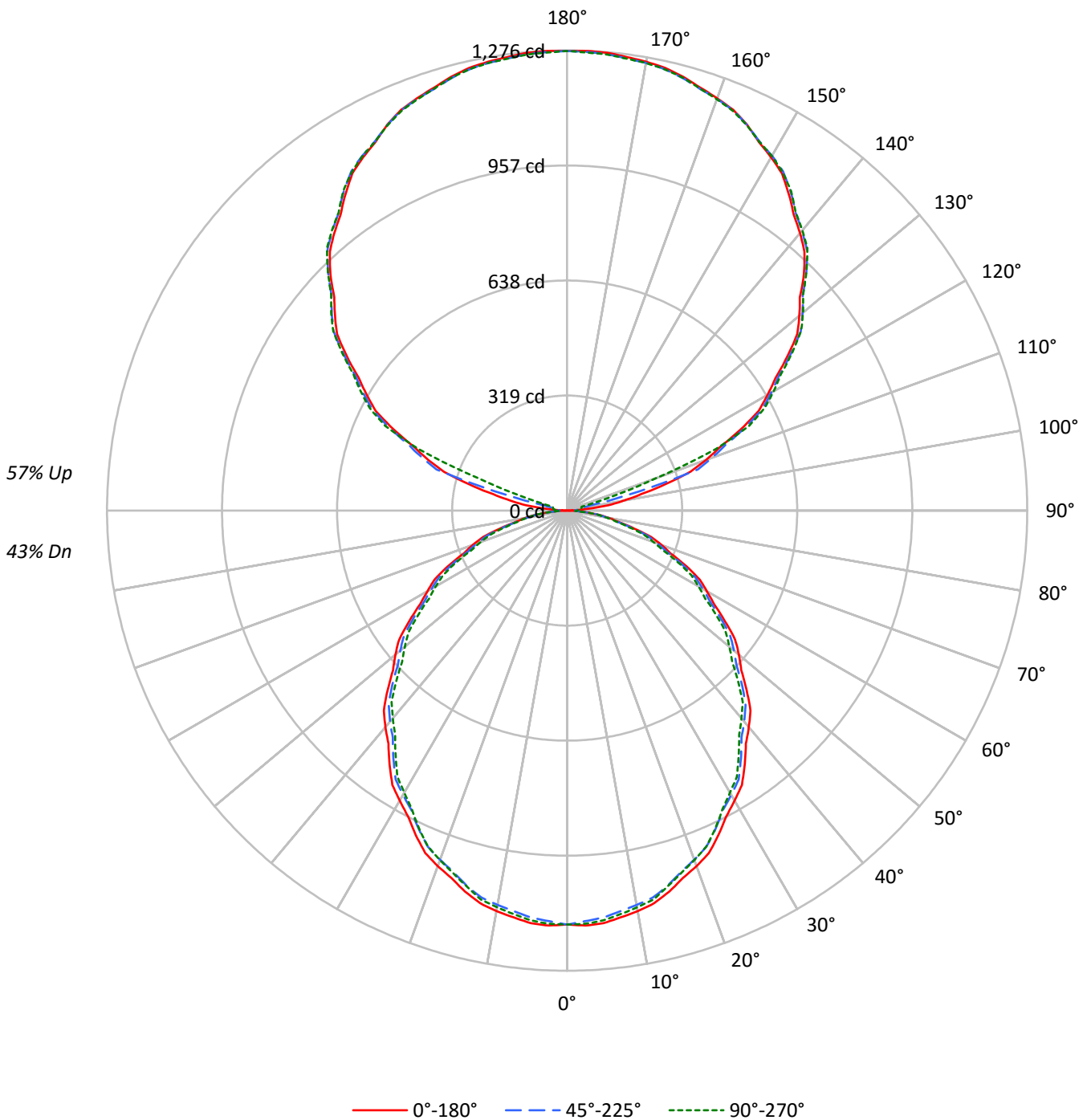
Lumens per Lamp: N/A  
Luminaire Lumens: 6876.1 lumens  
Efficiency: N/A  
Efficacy: 130.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse  
  
Input Watts (W): 52.6  
Input Voltage (V): 120  
Input Current (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	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	43				
1	96	92	88	85	88	84	81	78	70	67	65	56	55	53	44	43	42	36				
2	88	80	74	69	80	74	68	64	61	57	54	50	47	45	39	37	35	31				
3	80	70	63	57	73	65	58	53	54	49	45	44	40	38	34	32	30	26				
4	73	62	54	48	67	57	50	45	48	43	39	39	35	32	31	28	26	22				
5	67	55	47	41	61	51	44	39	43	37	33	35	31	28	28	25	23	19				
6	62	50	42	36	56	46	39	34	38	33	29	32	27	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	19	16	14	12				
10	46	34	27	22	42	31	25	21	27	22	18	22	18	16	18	15	13	11				

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

	0°	45°	90°
0°	12355	12355	12355
5°	12413	12241	12327
10°	12329	12136	12211
15°	12186	11999	12021
20°	12016	11802	11813
25°	11792	11569	11545
30°	11543	11309	11225
35°	11284	11037	10893
40°	11011	10732	10568
45°	10712	10456	10201
50°	10412	10114	9833
55°	10021	9760	9466
60°	9623	9347	9052
65°	9276	8899	8621
70°	8759	8387	8013
75°	8006	7719	7390
80°	7221	6912	6856
85°	6336	6101	5854



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	108.1	1.6
10°-20°	305.3	4.4
20°-30°	451.0	6.6
30°-40°	526.8	7.7
40°-50°	529.6	7.7
50°-60°	465.2	6.8
60°-70°	346.6	5.0
70°-80°	197.5	2.9
80°-90°	60.3	0.9
90°-100°	46.3	0.7
100°-110°	220.8	3.2
110°-120°	530.4	7.7
120°-130°	675.4	9.8
130°-140°	721.6	10.5
140°-150°	674.8	9.8
150°-160°	544.3	7.9
160°-170°	351.3	5.1
170°-180°	121.1	1.8
0°-30°	864.4	12.6
0°-40°	1391.1	20.2
0°-60°	2385.9	34.7
0°-90°	2990.2	43.5
90°-120°	797.5	11.6
90°-150°	2869.2	41.7
90°-180°	3886.0	56.5
0°-180°	6876.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1148	1148	1148	1148	1148	
5°	1149	1143	1133	1142	1141	109
15°	1094	1089	1077	1084	1079	308
25°	993	987	974	975	972	457
35°	859	852	840	834	829	537
45°	704	699	687	675	670	543
55°	534	532	520	510	504	478
65°	364	359	349	342	338	359
75°	192	189	186	181	178	206
85°	51	50	49	48	47	56
90°	1	11	23	26	28	5
95°	58	22	29	36	36	71
105°	282	287	207	49	42	299
115°	529	535	543	553	557	522
125°	746	753	757	759	761	666
135°	929	934	938	941	938	715
145°	1072	1078	1080	1082	1082	671
155°	1180	1179	1180	1184	1179	544
165°	1245	1242	1241	1248	1242	352
175°	1274	1270	1270	1276	1270	121
180°	1274	1274	1274	1274	1274	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8
2.5°	1151.7	1151.0	1150.4	1149.6	1149.0	1147.6	1145.7	1143.8	1141.8	1139.9	1141.6
5°	1148.8	1147.6	1146.6	1145.5	1144.3	1142.6	1140.2	1137.8	1135.4	1132.9	1135.2
7.5°	1137.6	1136.4	1135.3	1134.3	1133.1	1131.3	1128.8	1126.3	1123.8	1121.3	1123.3
10°	1128.0	1126.9	1125.9	1124.7	1123.7	1121.7	1118.8	1116.0	1113.1	1110.3	1112.3
12.5°	1115.4	1114.5	1113.6	1112.7	1111.7	1109.9	1107.3	1104.6	1101.9	1099.2	1100.7
15°	1093.5	1092.6	1091.7	1090.9	1090.0	1088.2	1085.2	1082.4	1079.6	1076.8	1078.5
17.5°	1068.0	1066.9	1065.7	1064.6	1063.5	1061.5	1058.7	1055.7	1052.9	1050.1	1051.3
20°	1049.0	1047.7	1046.5	1045.2	1043.9	1041.7	1038.9	1036.0	1033.2	1030.3	1031.2
22.5°	1027.7	1026.4	1025.1	1023.8	1022.5	1020.4	1017.6	1014.7	1011.9	1009.0	1009.7
25°	992.9	991.6	990.2	988.9	987.6	985.5	982.6	979.8	976.9	974.1	974.3
27.5°	955.5	954.2	953.0	951.7	950.5	948.3	945.2	942.2	939.1	935.9	936.1
30°	928.7	927.6	926.5	925.4	924.3	922.2	919.2	916.1	913.0	909.9	909.9
32.5°	901.8	900.4	898.9	897.5	896.1	894.2	891.7	889.4	887.0	884.7	883.4
35°	858.7	857.3	856.0	854.7	853.4	851.3	848.4	845.6	842.7	839.9	838.6
37.5°	814.4	812.8	811.1	809.4	807.8	805.5	802.6	799.7	796.7	793.9	792.3
40°	783.6	782.3	781.0	779.7	778.4	776.2	773.1	770.1	766.9	763.8	762.1
42.5°	752.8	751.3	749.8	748.4	746.9	744.6	741.5	738.4	735.4	732.3	730.6
45°	703.7	702.8	701.9	701.1	700.1	698.3	695.4	692.6	689.8	686.9	684.3
47.5°	654.9	653.7	652.3	651.1	649.8	647.8	645.2	642.5	639.8	637.2	634.5
50°	621.8	620.7	619.5	618.5	617.4	615.4	612.6	609.7	606.8	604.0	601.6
52.5°	587.0	586.3	585.5	584.8	584.0	582.1	579.1	576.1	573.1	570.0	568.0
55°	534.0	533.7	533.5	533.3	533.0	531.5	528.7	525.8	522.9	520.1	517.7
57.5°	483.4	482.7	481.9	481.2	480.4	478.9	476.6	474.3	472.0	469.8	467.6
60°	447.0	446.9	446.7	446.4	446.2	444.8	442.1	439.5	436.9	434.2	432.3
62.5°	414.7	414.2	413.6	413.0	412.5	410.9	408.2	405.6	402.9	400.3	398.3
65°	364.2	363.1	361.9	360.9	359.8	358.2	355.9	353.7	351.6	349.4	347.6
67.5°	310.7	309.7	308.8	307.7	306.8	305.5	303.9	302.2	300.5	298.9	297.3
70°	278.3	277.0	275.7	274.4	273.1	271.7	270.4	269.1	267.8	266.5	264.9
72.5°	244.4	243.4	242.4	241.5	240.5	239.3	237.8	236.3	234.8	233.3	232.0
75°	192.5	191.5	190.7	189.8	189.0	188.1	187.5	186.8	186.2	185.6	184.5
77.5°	146.5	146.0	145.5	145.1	144.5	143.9	143.1	142.3	141.6	140.7	140.0
80°	116.5	115.8	115.2	114.5	113.9	113.3	112.8	112.4	112.0	111.5	111.3
82.5°	87.3	87.1	87.0	86.8	86.7	86.6	86.5	86.4	86.3	86.2	85.9
85°	51.3	50.9	50.4	50.0	49.6	49.4	49.4	49.4	49.4	49.4	48.9
87.5°	20.7	20.6	20.5	20.4	20.3	20.5	20.8	21.2	21.6	21.9	21.9
90°	0.9	3.0	5.2	7.3	9.3	11.8	14.5	17.2	20.0	22.7	23.6
92.5°	17.6	17.1	16.4	15.8	15.3	16.0	18.1	20.1	22.1	24.2	25.5
95°	57.8	49.1	40.5	31.9	23.3	20.1	22.4	24.7	27.1	29.3	30.8
97.5°	116.0	112.2	108.3	104.4	100.6	91.0	76.0	60.8	45.6	30.4	32.1
100°	159.9	164.2	168.4	172.6	176.8	162.5	129.7	96.9	64.1	31.2	32.9
102.5°	210.0	213.0	216.0	219.0	222.1	205.7	169.8	134.0	98.1	62.3	57.1
105°	282.1	284.5	286.7	289.1	291.3	283.0	264.1	245.2	226.3	207.4	170.1
107.5°	358.3	360.1	361.9	363.8	365.6	368.1	371.1	374.0	377.0	380.0	352.7
110°	409.0	410.7	412.4	414.1	415.7	417.7	420.0	422.4	424.6	427.0	420.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	457.4	458.9	460.4	462.0	463.5	465.4	467.7	470.0	472.4	474.7	474.8
115°	529.2	530.5	531.7	533.0	534.2	535.8	537.7	539.6	541.5	543.4	545.5
117.5°	598.7	600.2	601.8	603.3	604.9	606.1	607.2	608.1	609.1	610.0	611.7
120°	641.9	643.8	645.6	647.5	649.4	650.7	651.3	652.0	652.6	653.2	654.9
122.5°	685.8	687.3	688.9	690.4	692.0	693.1	694.0	694.7	695.6	696.4	697.6
125°	746.0	747.7	749.3	751.0	752.7	754.0	754.8	755.6	756.5	757.3	757.8
127.5°	804.3	806.0	807.7	809.4	811.1	812.4	813.4	814.5	815.4	816.4	817.1
130°	840.7	842.4	844.0	845.7	847.4	848.7	849.5	850.4	851.2	852.1	852.9
132.5°	875.5	877.2	878.8	880.5	882.2	883.4	884.1	884.8	885.4	886.1	886.9
135°	928.7	930.0	931.2	932.5	933.8	934.8	935.7	936.5	937.4	938.2	938.8
137.5°	974.1	975.7	977.3	978.9	980.5	981.6	982.0	982.5	983.0	983.4	984.4
140°	1004.5	1005.7	1007.0	1008.2	1009.5	1010.4	1011.1	1011.7	1012.3	1013.0	1013.8
142.5°	1032.5	1033.7	1035.0	1036.2	1037.6	1038.5	1039.1	1039.7	1040.4	1040.9	1041.7
145°	1071.7	1073.1	1074.6	1076.1	1077.5	1078.5	1078.9	1079.3	1079.8	1080.2	1080.6
147.5°	1108.6	1109.6	1110.5	1111.4	1112.5	1113.1	1113.5	1114.0	1114.4	1114.8	1115.2
150°	1131.3	1131.9	1132.6	1133.2	1133.8	1134.3	1134.7	1135.2	1135.6	1136.0	1136.4
152.5°	1151.8	1152.1	1152.4	1152.6	1152.9	1153.2	1153.5	1153.7	1154.0	1154.2	1155.0
155°	1180.5	1180.1	1179.7	1179.3	1178.8	1178.7	1178.9	1179.1	1179.4	1179.6	1180.6
157.5°	1202.9	1202.9	1202.8	1202.8	1202.7	1202.6	1202.4	1202.1	1201.9	1201.7	1203.0
160°	1216.5	1216.3	1216.1	1215.9	1215.7	1215.4	1215.2	1215.0	1214.8	1214.7	1215.9
162.5°	1229.4	1228.8	1228.3	1227.8	1227.2	1226.8	1226.6	1226.4	1226.2	1226.0	1227.4
165°	1244.9	1244.3	1243.7	1243.0	1242.4	1242.0	1241.7	1241.5	1241.3	1241.1	1242.8
167.5°	1257.0	1256.2	1255.4	1254.5	1253.7	1253.2	1253.2	1253.2	1253.2	1253.2	1254.9
170°	1263.9	1263.0	1262.2	1261.3	1260.5	1260.1	1260.1	1260.1	1260.1	1260.1	1261.7
172.5°	1268.4	1267.3	1266.4	1265.4	1264.3	1263.9	1264.0	1264.2	1264.4	1264.6	1266.3
175°	1274.2	1273.2	1272.1	1271.1	1270.1	1269.6	1269.8	1270.1	1270.3	1270.5	1272.0
177.5°	1275.7	1274.9	1274.1	1273.3	1272.4	1272.1	1272.2	1272.4	1272.5	1272.7	1274.1
180°	1274.2	1274.2	1274.2	1274.2	1274.2	1274.2	1274.2	1274.2	1274.2	1274.2	1274.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8	1147.8
2.5°	1143.4	1145.2	1146.9	1147.7	1147.5	1147.4	1147.2	1147.0
5°	1137.4	1139.5	1141.8	1142.6	1142.2	1141.8	1141.3	1140.9
7.5°	1125.3	1127.3	1129.3	1130.1	1129.8	1129.5	1129.3	1129.1
10°	1114.3	1116.2	1118.1	1119.0	1118.5	1118.0	1117.7	1117.2
12.5°	1102.1	1103.5	1105.0	1105.6	1105.3	1105.0	1104.8	1104.6
15°	1080.2	1081.9	1083.7	1083.9	1082.6	1081.3	1080.1	1078.7
17.5°	1052.5	1053.8	1055.0	1055.4	1054.9	1054.4	1054.0	1053.5
20°	1032.1	1032.9	1033.9	1034.0	1033.3	1032.6	1032.0	1031.3
22.5°	1010.4	1011.2	1011.8	1011.7	1011.0	1010.1	1009.3	1008.4
25°	974.5	974.8	975.0	974.8	974.1	973.5	972.8	972.1
27.5°	936.3	936.5	936.7	936.3	935.6	934.7	933.9	933.0
30°	909.9	909.9	909.9	909.2	907.7	906.1	904.6	903.1
32.5°	882.2	881.0	879.8	878.7	877.9	877.0	876.2	875.4
35°	837.3	835.9	834.6	833.4	832.3	831.2	830.1	829.0
37.5°	790.7	789.1	787.6	786.5	785.7	785.0	784.3	783.6
40°	760.3	758.7	756.9	755.5	754.7	753.8	752.9	752.1
42.5°	728.8	727.0	725.3	724.0	723.1	722.2	721.3	720.5
45°	681.6	679.0	676.4	674.5	673.4	672.3	671.2	670.1
47.5°	632.0	629.4	626.8	625.0	624.1	623.1	622.2	621.1
50°	599.2	596.7	594.4	592.5	591.2	589.8	588.5	587.2
52.5°	565.9	563.8	561.8	560.2	558.8	557.5	556.2	554.9
55°	515.3	512.8	510.5	508.7	507.6	506.5	505.4	504.4
57.5°	465.4	463.4	461.2	459.5	458.2	456.9	455.6	454.4
60°	430.3	428.3	426.3	424.8	423.7	422.6	421.5	420.5
62.5°	396.3	394.4	392.4	391.1	390.3	389.6	388.8	388.0
65°	345.8	344.1	342.3	341.1	340.4	339.8	339.1	338.5
67.5°	295.8	294.3	292.7	291.4	290.6	289.6	288.7	287.8
70°	263.4	261.8	260.3	259.0	257.9	256.8	255.7	254.6
72.5°	230.5	229.2	227.9	226.9	226.3	225.7	225.2	224.6
75°	183.3	182.3	181.2	180.3	179.6	179.0	178.3	177.7
77.5°	139.2	138.5	137.7	137.4	137.4	137.4	137.4	137.4
80°	111.1	110.8	110.7	110.6	110.6	110.6	110.6	110.6
82.5°	85.5	85.1	84.6	84.4	84.3	84.1	83.9	83.7
85°	48.4	48.1	47.6	47.4	47.4	47.4	47.4	47.4
87.5°	21.9	21.9	21.9	22.0	22.0	22.1	22.1	22.2
90°	24.4	25.3	26.1	26.7	27.1	27.5	28.0	28.4
92.5°	27.0	28.3	29.6	30.4	30.6	30.9	31.2	31.4
95°	32.3	33.7	35.3	36.0	36.0	36.0	36.0	36.0
97.5°	33.8	35.5	37.2	38.2	38.4	38.5	38.8	39.0
100°	34.6	36.3	38.0	38.9	39.1	39.3	39.6	39.8
102.5°	51.8	46.7	41.4	39.0	39.4	39.8	40.2	40.5
105°	132.9	95.6	58.3	40.0	40.4	40.8	41.2	41.7
107.5°	325.4	298.1	270.8	243.1	215.0	187.0	158.9	130.8
110°	413.1	406.1	399.2	380.7	350.6	320.5	290.4	260.3





TEST NUMBER: P332166-830

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	474.9	475.0	475.1	472.0	465.7	459.4	453.0	446.7
115°	547.6	549.7	551.9	553.3	554.1	555.0	555.8	556.7
117.5°	613.4	615.1	616.8	617.7	617.8	618.0	618.2	618.4
120°	656.6	658.3	660.0	660.8	660.8	660.8	660.8	660.8
122.5°	698.7	699.9	701.1	701.8	701.9	702.1	702.3	702.5
125°	758.2	758.7	759.0	759.5	759.9	760.3	760.7	761.1
127.5°	817.7	818.4	819.2	819.3	818.8	818.4	818.0	817.6
130°	853.8	854.5	855.4	855.6	855.2	854.8	854.3	853.9
132.5°	887.8	888.6	889.5	889.6	889.0	888.4	887.9	887.2
135°	939.4	940.1	940.7	940.7	940.1	939.4	938.8	938.2
137.5°	985.4	986.5	987.5	987.8	987.3	986.9	986.5	986.1
140°	1014.6	1015.5	1016.3	1016.5	1016.2	1015.7	1015.3	1014.8
142.5°	1042.4	1043.0	1043.7	1043.7	1043.1	1042.5	1042.0	1041.3
145°	1081.0	1081.5	1081.9	1082.0	1082.0	1082.0	1082.0	1082.0
147.5°	1115.7	1116.1	1116.5	1116.3	1115.3	1114.3	1113.3	1112.4
150°	1136.9	1137.3	1137.7	1137.6	1137.0	1136.3	1135.8	1135.1
152.5°	1155.7	1156.5	1157.3	1157.2	1156.1	1155.2	1154.2	1153.3
155°	1181.7	1182.7	1183.8	1183.6	1182.4	1181.2	1179.9	1178.6
157.5°	1204.3	1205.5	1206.7	1206.5	1204.9	1203.3	1201.6	1200.0
160°	1217.1	1218.4	1219.7	1219.6	1218.0	1216.6	1215.1	1213.6
162.5°	1228.8	1230.3	1231.7	1231.7	1230.5	1229.2	1227.9	1226.5
165°	1244.4	1246.1	1247.8	1247.9	1246.5	1245.0	1243.5	1242.1
167.5°	1256.6	1258.3	1260.0	1260.0	1258.3	1256.6	1254.9	1253.2
170°	1263.4	1265.1	1266.8	1266.8	1265.1	1263.4	1261.7	1260.1
172.5°	1268.0	1269.6	1271.3	1271.2	1269.4	1267.5	1265.6	1263.9
175°	1273.4	1274.9	1276.4	1276.3	1274.6	1272.9	1271.2	1269.5
177.5°	1275.4	1276.8	1278.1	1278.0	1276.3	1274.6	1272.9	1271.2
180°	1274.2	1274.2	1274.2	1274.2	1274.2	1274.2	1274.2	1274.2

(END OF REPORT)