

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: P332819-830

Luminaire Tested: **S124DIW-S1020D1050U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332819-830
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: S124DIW-S1020D1050U830-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1050 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7920.2 lumens
Efficiency: N/A
Efficacy: 129.4 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: General Diffuse

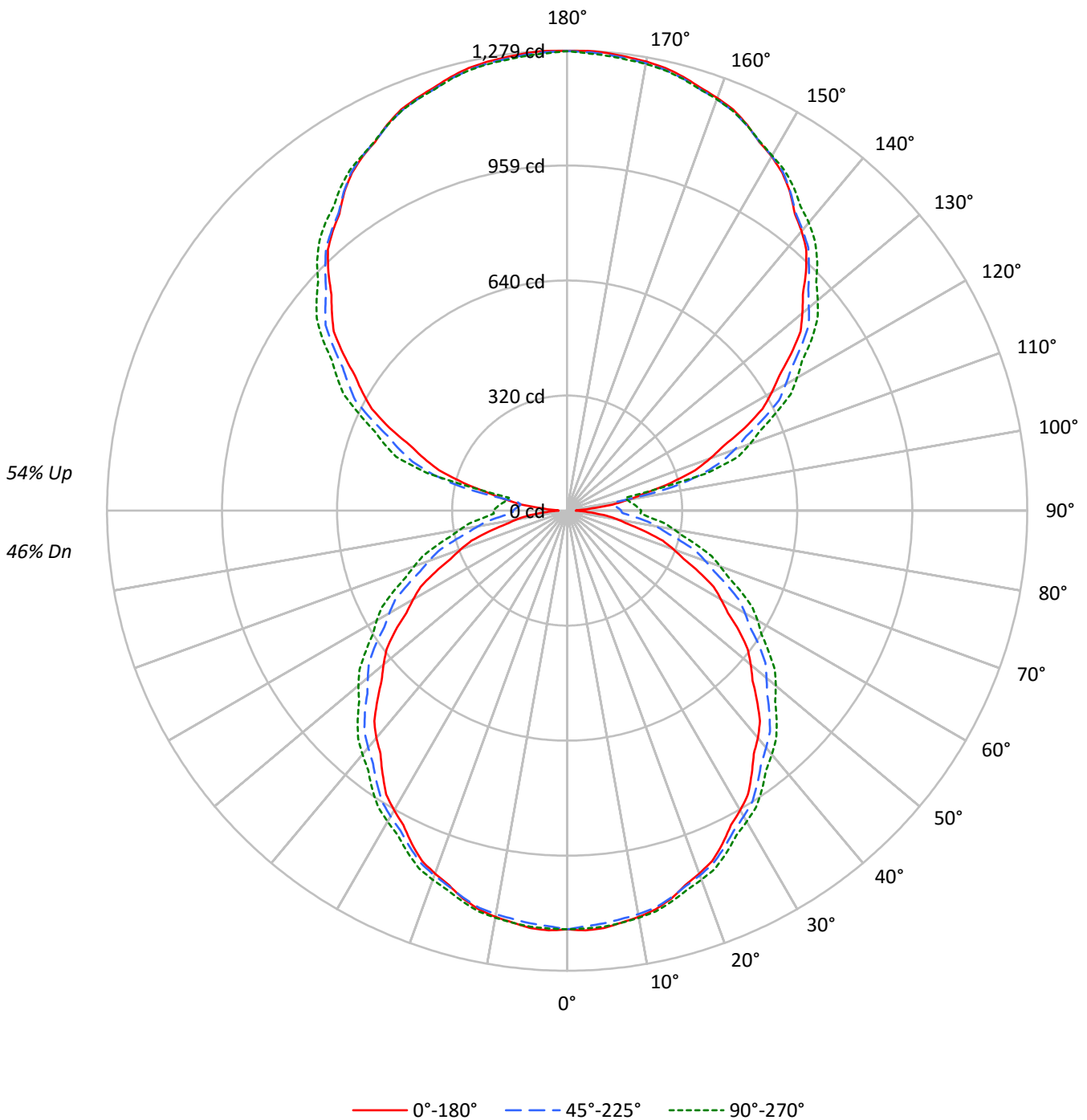
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332819-830

CATALOG NUMBER: S124DIW-S1020D1050U830-4F0-1E-UDD-D

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	98	98	98	98	81	81	81	66	66	66	53	53	53	46
1	96	91	87	83	88	84	80	77	70	67	65	57	55	53	45	44	43	37
2	87	79	73	67	79	73	67	62	61	56	53	49	46	44	39	37	35	30
3	79	69	62	55	72	64	57	52	53	48	44	43	40	37	34	32	29	25
4	72	61	53	47	66	56	49	43	47	41	37	38	34	31	30	28	25	21
5	66	54	46	40	60	50	43	37	42	36	32	34	30	27	27	24	22	18
6	61	48	40	34	56	45	37	32	38	32	28	31	27	23	25	21	19	16
7	56	44	36	30	51	40	33	28	34	28	24	28	24	20	23	19	17	14
8	52	40	32	26	48	37	30	25	31	25	21	26	21	18	21	17	15	12
9	48	36	28	23	44	33	27	22	28	23	19	24	19	16	19	16	13	11
10	45	33	26	21	41	31	24	20	26	21	17	22	18	15	18	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9395	9395	9395
5°	9424	9182	9208
10°	9366	9032	9024
15°	9282	8858	8809
20°	9156	8666	8599
25°	9013	8450	8368
30°	8859	8237	8131
35°	8684	8018	7924
40°	8544	7809	7708
45°	8336	7617	7522
50°	8161	7395	7326
55°	7979	7187	7096
60°	7697	6921	6885
65°	7387	6635	6628
70°	7013	6309	6327
75°	6486	5950	6056
80°	5904	5605	5788
85°	5170	5301	5633



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.2	1.4
10°-20°	315.7	4.0
20°-30°	477.4	6.0
30°-40°	577.6	7.3
40°-50°	610.7	7.7
50°-60°	574.7	7.3
60°-70°	476.8	6.0
70°-80°	334.9	4.2
80°-90°	193.1	2.4
90°-100°	156.1	2.0
100°-110°	361.7	4.6
110°-120°	588.5	7.4
120°-130°	707.7	8.9
130°-140°	737.0	9.3
140°-150°	679.2	8.6
150°-160°	545.6	6.9
160°-170°	351.9	4.4
170°-180°	121.3	1.5
0°-30°	903.4	11.4
0°-40°	1481.0	18.7
0°-60°	2666.4	33.7
0°-90°	3671.3	46.4
90°-120°	1106.3	14.0
90°-150°	3230.2	40.8
90°-180°	4249.0	53.6
0°-180°	7920.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1164	1164	1164	1164	1164	
5°	1165	1161	1152	1162	1161	111
15°	1117	1118	1114	1125	1125	315
25°	1022	1029	1033	1047	1049	470
35°	894	910	923	940	945	560
45°	745	770	795	816	824	576
55°	584	612	650	675	684	520
65°	404	446	490	521	533	400
75°	224	273	327	362	375	238
85°	69	124	182	220	235	74
90°	24	86	150	192	206	16
95°	70	82	134	174	188	81
105°	299	332	384	422	401	314
115°	544	561	600	629	640	536
125°	760	764	793	819	829	678
135°	938	938	950	972	983	723
145°	1080	1082	1082	1091	1098	675
155°	1183	1184	1181	1185	1182	545
165°	1248	1244	1243	1250	1242	353
175°	1277	1271	1272	1280	1269	122
180°	1277	1277	1277	1277	1277	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1167.9	1167.2	1166.5	1165.8	1165.1	1163.9	1162.0	1160.2	1158.3	1156.4	1158.0
5°	1165.0	1164.1	1163.3	1162.4	1161.6	1160.1	1158.1	1156.0	1154.0	1152.0	1154.3
7.5°	1155.1	1154.6	1154.0	1153.6	1153.0	1152.0	1150.3	1148.6	1146.9	1145.2	1147.8
10°	1146.8	1146.5	1146.2	1145.9	1145.7	1144.7	1143.3	1141.9	1140.4	1139.0	1141.6
12.5°	1135.3	1135.3	1135.2	1135.1	1135.1	1134.5	1133.6	1132.6	1131.6	1130.6	1133.0
15°	1116.8	1117.1	1117.4	1117.7	1117.9	1117.7	1116.8	1116.0	1115.0	1114.2	1116.8
17.5°	1091.6	1092.4	1093.3	1094.1	1095.0	1095.3	1095.1	1095.0	1094.9	1094.7	1097.3
20°	1073.8	1074.7	1075.5	1076.4	1077.3	1077.9	1078.2	1078.5	1078.7	1079.0	1081.9
22.5°	1054.0	1055.1	1056.2	1057.3	1058.4	1059.2	1059.7	1060.3	1060.7	1061.3	1064.2
25°	1021.7	1023.4	1025.1	1026.9	1028.6	1029.9	1030.8	1031.7	1032.6	1033.4	1036.6
27.5°	985.7	988.3	990.8	993.3	995.9	997.9	999.2	1000.5	1001.8	1003.1	1006.2
30°	961.8	964.0	966.4	968.7	971.0	973.2	975.2	977.2	979.2	981.3	984.5
32.5°	935.7	938.5	941.2	944.1	946.8	949.3	951.6	953.9	956.1	958.4	962.0
35°	894.0	897.5	900.9	904.4	907.9	911.1	914.0	916.8	919.7	922.7	926.7
37.5°	852.0	856.0	860.0	864.0	868.0	871.8	875.3	878.9	882.6	886.2	890.2
40°	824.9	828.7	832.5	836.2	840.0	843.9	847.9	852.0	856.0	860.1	864.4
42.5°	793.6	797.9	802.1	806.3	810.5	815.0	819.7	824.5	829.2	834.1	838.9
45°	745.4	750.9	756.4	762.0	767.4	772.9	778.4	783.9	789.4	794.9	799.8
47.5°	699.3	704.9	710.6	716.3	722.0	728.0	734.3	740.7	747.2	753.5	758.6
50°	665.9	672.3	678.6	685.0	691.4	697.8	704.2	710.5	716.9	723.2	729.1
52.5°	632.5	638.9	645.3	651.7	658.1	664.9	672.1	679.5	686.7	694.1	699.8
55°	583.8	589.9	596.0	602.1	608.1	615.5	624.2	632.9	641.6	650.3	656.1
57.5°	529.3	536.9	544.4	552.0	559.5	567.5	576.2	584.8	593.4	602.1	609.0
60°	493.9	501.4	509.0	516.5	524.1	532.5	542.2	551.7	561.2	570.8	577.4
62.5°	459.5	467.7	476.0	484.2	492.4	501.2	510.9	520.4	530.0	539.5	546.2
65°	404.0	413.2	422.5	431.8	441.0	450.6	460.4	470.3	480.1	490.0	497.2
67.5°	350.5	360.4	370.2	380.1	389.9	400.1	410.7	421.2	431.8	442.3	449.7
70°	314.1	324.0	333.8	343.6	353.5	363.9	374.8	385.9	396.9	407.9	415.8
72.5°	278.6	288.7	298.8	308.9	319.0	329.8	341.5	353.2	365.0	376.6	384.2
75°	224.1	234.9	245.5	256.3	267.0	278.4	290.6	302.7	314.9	327.1	335.2
77.5°	173.3	184.6	196.0	207.4	218.8	230.7	243.6	256.3	269.0	281.7	289.9
80°	142.0	153.6	165.2	176.8	188.4	200.6	213.3	226.0	238.7	251.5	260.2
82.5°	110.7	122.8	134.9	146.9	158.9	171.4	184.1	196.8	209.6	222.3	231.2
85°	69.1	81.2	93.4	105.6	117.7	130.4	143.4	156.4	169.4	182.5	191.1
87.5°	39.1	51.5	63.7	76.0	88.3	100.9	114.0	127.0	140.0	153.1	161.6
90°	23.8	37.6	51.6	65.5	79.4	93.4	107.5	121.7	135.9	150.1	159.7
92.5°	31.9	42.4	53.0	63.5	74.1	86.4	100.6	114.7	128.8	143.0	152.4
95°	69.5	71.8	74.2	76.5	78.8	86.1	98.1	110.2	122.3	134.4	143.5
97.5°	127.0	139.7	152.4	165.1	177.8	178.2	166.3	154.4	142.4	130.5	138.2
100°	171.0	182.3	193.7	205.0	216.3	213.0	195.0	177.0	159.0	141.1	145.2
102.5°	221.4	230.7	240.2	249.6	259.0	267.3	274.6	281.8	289.1	296.2	264.9
105°	299.2	306.2	313.3	320.4	327.4	336.9	348.6	360.4	372.2	384.0	393.1
107.5°	373.6	379.0	384.4	389.7	395.1	403.6	415.2	426.8	438.4	450.0	458.0
110°	423.0	427.6	432.3	437.1	441.8	449.8	461.2	472.6	484.0	495.4	502.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	470.8	475.5	480.3	485.0	489.7	497.3	507.6	517.8	528.1	538.4	544.7
115°	544.5	547.7	551.0	554.2	557.5	563.6	572.7	581.7	590.8	599.8	606.6
117.5°	612.1	614.4	616.9	619.3	621.7	627.5	636.6	645.6	654.8	663.8	669.8
120°	656.9	658.6	660.3	662.0	663.7	668.6	676.8	685.0	693.2	701.4	707.7
122.5°	699.6	700.3	701.0	701.7	702.4	706.8	715.0	723.3	731.5	739.7	745.8
125°	759.6	760.2	760.7	761.3	761.9	765.5	772.4	779.2	786.0	792.8	799.0
127.5°	817.5	817.4	817.3	817.2	817.1	820.4	826.9	833.4	840.0	846.5	851.6
130°	853.8	853.8	853.7	853.6	853.5	856.1	861.4	866.7	871.9	877.2	882.6
132.5°	888.3	888.3	888.3	888.4	888.5	890.9	895.4	899.9	904.5	908.9	914.1
135°	938.5	938.3	938.0	937.8	937.6	939.0	941.8	944.7	947.5	950.5	955.5
137.5°	984.1	983.9	983.7	983.5	983.3	984.1	986.1	988.0	990.0	991.8	996.6
140°	1013.9	1014.1	1014.2	1014.3	1014.5	1014.8	1015.6	1016.3	1017.0	1017.8	1022.1
142.5°	1039.6	1040.3	1041.0	1041.7	1042.5	1042.8	1042.9	1043.0	1043.1	1043.1	1046.9
145°	1080.4	1080.7	1081.1	1081.5	1081.8	1081.9	1081.9	1081.9	1081.9	1081.9	1083.9
147.5°	1113.0	1114.0	1114.8	1115.8	1116.6	1117.0	1116.8	1116.6	1116.3	1116.2	1116.5
150°	1136.8	1137.3	1137.8	1138.4	1139.0	1139.2	1139.0	1138.8	1138.5	1138.3	1138.3
152.5°	1155.6	1156.2	1156.8	1157.4	1158.1	1158.2	1157.8	1157.4	1157.1	1156.7	1157.0
155°	1183.2	1183.5	1183.6	1183.8	1184.0	1183.8	1183.2	1182.6	1181.9	1181.3	1182.1
157.5°	1206.7	1206.5	1206.5	1206.3	1206.2	1205.8	1205.0	1204.3	1203.6	1202.9	1204.0
160°	1220.4	1219.8	1219.2	1218.5	1217.9	1217.5	1217.3	1217.0	1216.8	1216.6	1217.9
162.5°	1232.7	1231.9	1231.1	1230.2	1229.5	1228.9	1228.7	1228.5	1228.3	1228.0	1229.4
165°	1248.1	1247.1	1246.0	1244.9	1243.9	1243.4	1243.4	1243.4	1243.4	1243.4	1245.1
167.5°	1260.4	1259.2	1258.2	1257.1	1255.9	1255.4	1255.2	1255.1	1255.0	1254.8	1256.7
170°	1267.2	1265.9	1264.7	1263.4	1262.2	1261.6	1261.8	1262.1	1262.3	1262.4	1264.1
172.5°	1271.8	1270.5	1269.2	1268.0	1266.7	1266.2	1266.4	1266.6	1266.9	1267.1	1268.8
175°	1276.8	1275.5	1274.2	1273.0	1271.7	1271.2	1271.4	1271.6	1271.8	1272.1	1273.9
177.5°	1279.0	1277.9	1276.7	1275.5	1274.3	1273.9	1274.2	1274.6	1274.9	1275.3	1276.6
180°	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1159.7	1161.3	1162.9	1163.6	1163.4	1163.1	1162.9	1162.7
5°	1156.6	1159.0	1161.3	1162.2	1162.0	1161.7	1161.4	1161.1
7.5°	1150.5	1153.0	1155.7	1156.8	1156.5	1156.2	1155.9	1155.7
10°	1144.2	1146.8	1149.4	1150.6	1150.3	1150.0	1149.7	1149.4
12.5°	1135.4	1137.7	1140.1	1141.3	1141.2	1141.1	1141.1	1141.0
15°	1119.5	1122.0	1124.6	1125.8	1125.5	1125.2	1124.9	1124.6
17.5°	1099.9	1102.7	1105.3	1106.5	1106.3	1106.1	1105.8	1105.6
20°	1084.8	1087.7	1090.6	1092.0	1092.0	1092.0	1092.0	1092.0
22.5°	1067.1	1070.0	1072.9	1074.6	1075.1	1075.4	1075.9	1076.4
25°	1039.8	1042.9	1046.1	1047.9	1048.2	1048.5	1048.8	1049.0
27.5°	1009.1	1012.0	1015.0	1016.6	1017.0	1017.4	1017.7	1018.0
30°	987.7	990.8	994.0	995.9	996.5	997.0	997.7	998.2
32.5°	965.6	969.3	973.0	975.1	975.6	976.2	976.8	977.4
35°	930.8	934.8	938.9	941.3	942.2	943.0	944.0	944.8
37.5°	894.4	898.5	902.6	905.1	906.1	907.0	907.9	908.8
40°	868.7	873.1	877.5	880.2	881.4	882.5	883.7	884.9
42.5°	843.7	848.5	853.3	856.1	857.1	858.0	858.9	859.8
45°	804.7	809.7	814.6	817.8	819.3	820.7	822.2	823.6
47.5°	763.6	768.7	773.9	777.3	779.0	780.8	782.5	784.3
50°	734.8	740.6	746.4	750.2	752.0	753.7	755.4	757.1
52.5°	705.7	711.4	717.3	721.0	722.7	724.4	726.2	727.9
55°	661.9	667.7	673.4	677.2	678.9	680.7	682.4	684.2
57.5°	615.9	622.7	629.6	633.9	635.5	637.2	638.8	640.4
60°	584.1	590.8	597.4	601.9	604.3	606.5	608.9	611.1
62.5°	552.8	559.5	566.2	570.6	573.0	575.2	577.6	579.9
65°	504.4	511.7	519.0	523.8	526.0	528.4	530.7	533.0
67.5°	457.0	464.4	471.7	476.5	478.8	481.1	483.3	485.6
70°	423.5	431.3	439.1	444.1	446.1	448.2	450.2	452.2
72.5°	391.8	399.4	407.0	411.9	414.2	416.4	418.7	420.9
75°	343.3	351.4	359.5	364.9	367.5	370.1	372.7	375.3
77.5°	298.2	306.4	314.6	320.2	322.9	325.7	328.5	331.3
80°	268.9	277.6	286.3	291.7	294.1	296.4	298.7	301.0
82.5°	240.2	249.1	258.0	263.7	266.3	268.8	271.4	273.9
85°	199.8	208.5	217.2	223.0	225.9	228.8	231.7	234.6
87.5°	170.3	179.0	187.7	193.3	196.0	198.5	201.1	203.8
90°	169.4	179.1	188.7	194.9	197.7	200.4	203.1	205.9
92.5°	161.9	171.4	180.8	186.7	189.1	191.5	193.9	196.3
95°	152.6	161.6	170.8	176.7	179.6	182.4	185.2	187.9
97.5°	145.9	153.6	161.4	166.5	169.3	172.0	174.7	177.4
100°	149.5	153.7	157.9	161.2	163.3	165.6	167.9	170.1
102.5°	233.7	202.3	171.0	156.5	158.7	161.1	163.3	165.6
105°	402.3	411.4	420.6	422.4	417.2	411.8	406.5	401.1
107.5°	466.1	474.1	482.2	487.7	490.5	493.4	496.3	499.2
110°	509.6	516.7	523.8	528.8	531.7	534.7	537.6	540.5



TEST NUMBER: P332819-830

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	551.0	557.3	563.7	568.4	571.6	574.7	577.8	581.0
115°	613.4	620.2	627.1	631.4	633.5	635.5	637.5	639.5
117.5°	675.7	681.6	687.6	691.6	693.9	696.2	698.4	700.6
120°	713.9	720.1	726.3	730.4	732.3	734.1	736.0	737.9
122.5°	751.9	757.9	763.9	767.8	769.5	771.1	772.8	774.4
125°	805.1	811.2	817.4	821.4	823.4	825.3	827.3	829.2
127.5°	856.7	861.8	866.9	870.2	872.0	873.9	875.7	877.5
130°	888.1	893.4	898.9	902.5	904.2	906.0	907.7	909.5
132.5°	919.4	924.5	929.7	933.1	934.6	936.2	937.8	939.3
135°	960.5	965.6	970.7	974.3	976.5	978.6	980.8	983.0
137.5°	1001.3	1005.9	1010.6	1013.6	1014.9	1016.2	1017.6	1018.9
140°	1026.5	1031.0	1035.4	1038.4	1040.0	1041.7	1043.4	1045.0
142.5°	1050.7	1054.4	1058.2	1060.7	1062.0	1063.3	1064.5	1065.7
145°	1085.9	1087.8	1089.8	1091.6	1093.2	1094.7	1096.3	1097.9
147.5°	1117.0	1117.4	1117.8	1118.5	1119.6	1120.8	1121.9	1123.1
150°	1138.3	1138.3	1138.3	1138.4	1138.6	1138.9	1139.1	1139.3
152.5°	1157.3	1157.6	1158.0	1158.1	1158.0	1157.8	1157.7	1157.6
155°	1183.0	1183.8	1184.7	1184.8	1184.1	1183.6	1182.9	1182.2
157.5°	1205.0	1206.2	1207.3	1207.3	1206.2	1205.0	1204.0	1202.9
160°	1219.2	1220.4	1221.7	1221.7	1220.4	1219.2	1217.9	1216.6
162.5°	1230.6	1231.9	1233.1	1233.1	1231.6	1230.2	1228.8	1227.3
165°	1246.8	1248.5	1250.2	1250.0	1248.1	1246.2	1244.3	1242.4
167.5°	1258.6	1260.5	1262.3	1262.2	1260.1	1257.9	1255.8	1253.7
170°	1265.8	1267.5	1269.2	1269.0	1266.9	1264.8	1262.6	1260.6
172.5°	1270.5	1272.1	1273.8	1273.6	1271.2	1268.9	1266.7	1264.3
175°	1275.8	1277.7	1279.7	1279.3	1276.8	1274.2	1271.7	1269.1
177.5°	1278.0	1279.3	1280.7	1280.3	1278.3	1276.3	1274.2	1272.2
180°	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8	1276.8

(END OF REPORT)