

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: P332231-930

Luminaire Tested: **S123DIW-S1165D1320U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332231-930
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-S1165D1320U930-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7687.1 lumens
Efficiency: N/A
Efficacy: 100.9 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

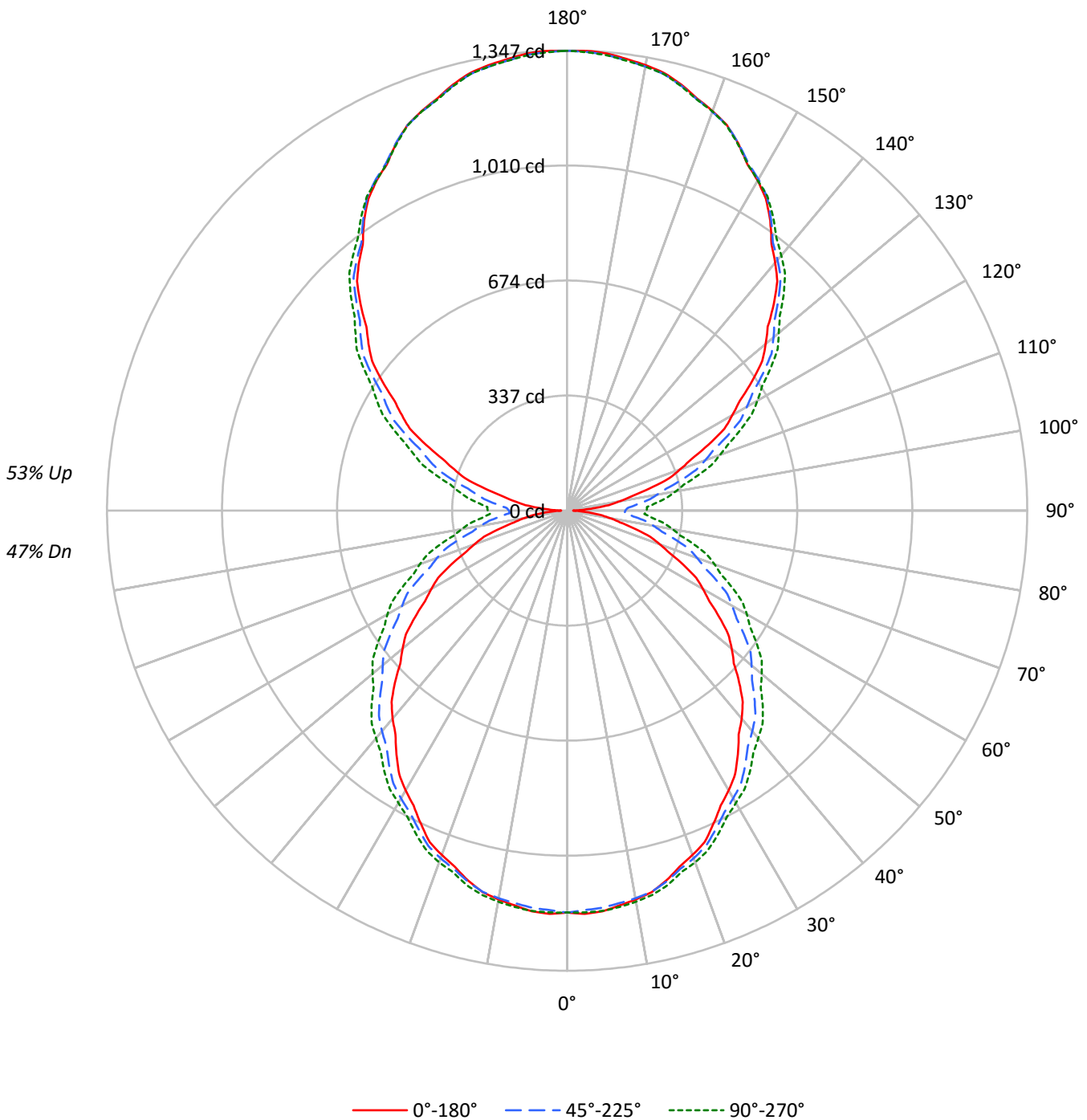
Input Watts (W): 76.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	98	98	98	98	82	82	82	67	67	67	54	54	54	47
1	96	91	87	83	88	84	80	77	70	67	65	57	56	54	46	44	43	38
2	87	79	73	67	80	73	67	62	61	57	53	50	47	44	40	38	36	31
3	79	69	62	56	72	64	57	52	53	48	44	44	40	37	35	32	30	26
4	72	61	53	47	66	56	49	44	47	42	37	39	35	31	31	28	25	22
5	66	54	46	40	61	50	43	37	42	36	32	35	30	27	28	25	22	19
6	61	49	40	34	56	45	37	32	38	32	28	31	27	23	25	22	19	16
7	56	44	36	30	51	40	33	28	34	29	24	28	24	21	23	20	17	14
8	52	40	32	26	48	37	30	25	31	26	22	26	22	18	21	18	15	13
9	49	36	29	23	45	34	27	22	29	23	19	24	20	16	19	16	14	11
10	45	33	26	21	42	31	24	20	26	21	17	22	18	15	18	15	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12664	12664	12664
5°	12703	12344	12352
10°	12589	12060	12000
15°	12427	11738	11616
20°	12195	11369	11194
25°	11908	10944	10750
30°	11616	10563	10299
35°	11287	10159	9939
40°	10973	9792	9555
45°	10626	9438	9247
50°	10281	9090	8908
55°	9903	8734	8603
60°	9533	8371	8291
65°	9155	7984	7918
70°	8585	7551	7537
75°	7860	7053	7148
80°	7035	6564	6706
85°	6264	6229	6450



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.5	1.5
10°-20°	317.9	4.1
20°-30°	475.5	6.2
30°-40°	567.9	7.4
40°-50°	594.1	7.7
50°-60°	557.5	7.3
60°-70°	465.7	6.1
70°-80°	333.2	4.3
80°-90°	202.7	2.6
90°-100°	212.4	2.8
100°-110°	354.1	4.6
110°-120°	507.6	6.6
120°-130°	622.2	8.1
130°-140°	675.7	8.8
140°-150°	652.1	8.5
150°-160°	546.2	7.1
160°-170°	363.6	4.7
170°-180°	127.3	1.7
0°-30°	905.0	11.8
0°-40°	1472.8	19.2
0°-60°	2624.5	34.1
0°-90°	3626.0	47.2
90°-120°	1074.0	14.0
90°-150°	3024.0	39.3
90°-180°	4061.0	52.8
0°-180°	7687.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1176	1176	1176	1176	1176	
5°	1178	1175	1168	1177	1176	112
15°	1121	1125	1124	1136	1136	316
25°	1012	1025	1029	1045	1046	466
35°	872	892	909	927	933	545
45°	713	743	775	799	810	549
55°	543	586	632	665	677	486
65°	376	426	482	519	533	371
75°	204	264	328	369	386	218
85°	63	127	195	237	251	66
90°	18	91	170	216	233	15
95°	76	135	205	247	262	81
105°	248	283	346	380	395	265
115°	456	476	518	549	559	451
125°	662	666	700	721	727	590
135°	856	861	874	892	897	659
145°	1036	1037	1040	1049	1051	647
155°	1185	1185	1186	1190	1183	545
165°	1291	1288	1288	1294	1287	364
175°	1343	1339	1339	1344	1338	128
180°	1346	1346	1346	1346	1346	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5
2.5°	1181.6	1181.0	1180.2	1179.6	1178.8	1177.6	1175.8	1173.9	1172.2	1170.4	1172.2
5°	1177.8	1177.2	1176.6	1176.1	1175.5	1174.4	1172.6	1170.9	1169.2	1167.5	1169.8
7.5°	1166.2	1166.4	1166.4	1166.6	1166.7	1166.0	1164.2	1162.6	1161.0	1159.3	1162.1
10°	1156.0	1156.6	1157.2	1157.7	1158.3	1157.8	1156.4	1155.0	1153.6	1152.1	1155.0
12.5°	1143.7	1144.4	1145.3	1146.1	1146.9	1146.8	1145.8	1144.8	1143.9	1142.9	1145.5
15°	1121.4	1122.3	1123.1	1124.0	1124.8	1125.1	1124.8	1124.5	1124.2	1124.0	1126.8
17.5°	1093.2	1094.9	1096.6	1098.3	1100.0	1100.8	1100.7	1100.6	1100.5	1100.3	1102.9
20°	1072.7	1074.4	1076.1	1077.8	1079.5	1080.7	1081.2	1081.8	1082.4	1083.0	1085.5
22.5°	1051.2	1052.9	1054.6	1056.3	1058.0	1059.2	1060.1	1060.9	1061.6	1062.4	1065.7
25°	1012.4	1015.3	1018.1	1021.0	1023.9	1025.6	1026.5	1027.4	1028.3	1029.1	1032.8
27.5°	973.5	976.7	980.0	983.3	986.4	989.0	990.8	992.6	994.5	996.3	999.5
30°	945.8	949.5	953.2	956.9	960.6	963.6	965.9	968.2	970.5	972.7	976.2
32.5°	915.0	919.2	923.3	927.5	931.6	935.2	938.2	941.2	944.1	947.1	950.7
35°	871.5	876.0	880.6	885.2	889.7	893.8	897.6	901.2	904.9	908.7	912.9
37.5°	825.3	830.5	835.6	840.7	845.9	850.7	855.2	859.8	864.4	868.9	873.8
40°	794.6	799.7	804.9	809.9	815.1	820.5	826.2	831.8	837.6	843.3	848.2
42.5°	760.8	767.0	773.3	779.5	785.8	791.9	797.9	803.7	809.7	815.6	820.9
45°	712.6	719.4	726.2	733.0	739.9	746.9	754.0	761.1	768.3	775.3	780.7
47.5°	662.0	669.8	677.5	685.3	693.1	701.0	709.1	717.3	725.5	733.6	739.6
50°	629.2	637.2	645.2	653.1	661.1	669.5	678.4	687.2	696.0	704.8	711.4
52.5°	594.4	602.8	611.2	619.7	628.1	637.2	646.9	656.6	666.4	676.1	683.0
55°	543.4	552.8	562.1	571.6	581.0	590.8	601.0	611.3	621.6	631.9	639.5
57.5°	493.7	503.4	513.2	523.0	532.9	543.4	554.6	565.8	577.0	588.2	596.0
60°	458.8	469.0	479.3	489.6	499.8	510.8	522.4	534.1	545.8	557.5	565.5
62.5°	426.0	436.5	446.9	457.5	467.9	479.3	491.7	504.0	516.4	528.8	536.7
65°	375.5	386.6	397.7	408.8	420.0	431.8	444.3	456.8	469.4	481.8	490.4
67.5°	324.2	336.1	347.8	359.6	371.4	383.7	396.4	409.2	421.9	434.7	444.0
70°	288.4	300.6	312.8	325.1	337.4	350.3	363.9	377.6	391.3	405.0	414.1
72.5°	255.5	267.8	280.1	292.3	304.5	317.7	331.8	345.9	360.1	374.2	383.6
75°	203.7	217.2	230.6	243.9	257.3	271.1	285.4	299.6	313.8	328.1	337.5
77.5°	158.7	172.2	185.6	199.2	212.6	226.6	240.9	255.3	269.6	284.0	293.9
80°	126.9	140.8	154.8	168.8	182.7	197.1	211.9	226.7	241.5	256.3	266.0
82.5°	99.2	113.4	127.6	141.8	155.9	170.6	185.6	200.6	215.6	230.6	240.4
85°	62.8	77.0	91.3	105.5	119.8	134.4	149.5	164.6	179.7	194.8	204.5
87.5°	34.3	48.9	63.6	78.3	92.9	107.8	122.9	138.1	153.2	168.4	178.2
90°	17.7	34.0	50.3	66.6	82.9	99.9	117.5	135.0	152.6	170.2	180.8
92.5°	41.3	55.4	69.6	83.8	98.0	113.1	129.1	145.1	161.2	177.2	187.4
95°	76.5	89.3	102.0	114.7	127.5	141.8	157.6	173.5	189.3	205.1	214.9
97.5°	123.4	134.6	145.9	157.1	168.4	181.3	196.0	210.8	225.4	240.1	249.6
100°	155.3	165.8	176.4	186.9	197.5	209.9	224.1	238.4	252.7	266.9	275.9
102.5°	192.4	201.5	210.5	219.6	228.6	240.4	254.7	269.1	283.6	298.0	306.7
105°	248.2	255.5	262.8	270.1	277.4	288.2	302.6	317.0	331.3	345.7	353.7
107.5°	311.8	317.9	323.9	330.0	336.1	345.4	357.9	370.3	382.8	395.3	403.7
110°	351.3	356.9	362.6	368.1	373.7	382.5	394.4	406.2	418.1	429.9	438.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	393.6	398.1	402.7	407.2	411.6	419.4	430.4	441.5	452.5	463.5	471.8
115°	455.8	459.9	464.1	468.1	472.3	479.2	489.0	498.8	508.6	518.4	525.5
117.5°	519.4	522.0	524.6	527.2	529.7	535.6	544.5	553.6	562.6	571.6	578.3
120°	558.2	561.0	563.9	566.6	569.5	575.0	583.3	591.5	599.7	607.9	614.2
122.5°	599.6	601.4	603.2	605.0	606.7	611.8	620.1	628.4	636.7	645.1	650.8
125°	661.5	662.3	663.0	663.7	664.4	668.6	676.5	684.2	692.0	699.8	704.8
127.5°	719.9	721.1	722.4	723.6	724.8	728.6	734.9	741.2	747.5	753.8	758.1
130°	758.9	760.4	762.1	763.6	765.2	768.5	773.5	778.5	783.5	788.5	793.0
132.5°	796.7	798.6	800.4	802.2	804.0	807.0	811.0	815.1	819.0	823.1	827.2
135°	855.9	857.0	858.2	859.2	860.4	862.4	865.3	868.2	871.1	874.0	878.2
137.5°	910.6	911.6	912.6	913.5	914.4	916.1	918.4	920.8	923.2	925.6	929.1
140°	947.7	948.8	950.0	951.2	952.4	953.5	954.6	955.7	956.8	957.9	961.9
142.5°	982.4	983.3	984.2	985.2	986.2	986.9	987.5	988.1	988.7	989.3	992.9
145°	1036.5	1036.7	1036.9	1037.1	1037.2	1037.7	1038.4	1039.1	1039.8	1040.5	1042.5
147.5°	1082.6	1083.5	1084.3	1085.2	1086.0	1086.7	1087.4	1088.0	1088.7	1089.3	1090.1
150°	1115.6	1116.1	1116.6	1117.0	1117.4	1117.9	1118.4	1118.8	1119.3	1119.8	1119.8
152.5°	1142.6	1143.3	1143.9	1144.6	1145.3	1145.7	1146.1	1146.3	1146.6	1146.9	1147.3
155°	1185.4	1185.4	1185.4	1185.4	1185.4	1185.5	1185.7	1185.9	1186.2	1186.4	1187.4
157.5°	1221.7	1221.5	1221.2	1220.9	1220.6	1220.6	1220.7	1220.9	1221.2	1221.3	1222.3
160°	1244.6	1244.1	1243.7	1243.2	1242.7	1242.4	1242.4	1242.4	1242.4	1242.4	1243.7
162.5°	1264.9	1264.2	1263.6	1262.9	1262.2	1262.0	1262.2	1262.4	1262.6	1262.7	1264.0
165°	1291.1	1290.4	1289.7	1289.0	1288.3	1287.9	1287.9	1287.9	1287.9	1287.9	1289.3
167.5°	1312.1	1311.1	1310.2	1309.2	1308.3	1307.9	1308.1	1308.3	1308.5	1308.6	1310.1
170°	1323.9	1323.0	1322.0	1321.1	1320.1	1319.6	1319.6	1319.6	1319.6	1319.6	1321.3
172.5°	1333.2	1332.3	1331.3	1330.4	1329.4	1328.9	1328.9	1328.9	1328.9	1328.9	1330.4
175°	1343.0	1342.0	1341.1	1340.1	1339.1	1338.7	1338.7	1338.7	1338.7	1338.7	1340.1
177.5°	1347.0	1346.2	1345.4	1344.7	1343.9	1343.5	1343.5	1343.5	1343.5	1343.5	1344.7
180°	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5	1176.5
2.5°	1173.9	1175.8	1177.6	1178.4	1178.2	1177.9	1177.7	1177.5
5°	1172.1	1174.4	1176.6	1177.6	1177.4	1177.0	1176.8	1176.5
7.5°	1165.0	1167.8	1170.7	1172.0	1171.6	1171.3	1170.9	1170.6
10°	1157.8	1160.7	1163.5	1164.7	1164.1	1163.5	1162.9	1162.4
12.5°	1148.2	1150.8	1153.4	1154.4	1153.8	1153.2	1152.7	1152.1
15°	1129.6	1132.5	1135.3	1136.6	1136.4	1136.0	1135.8	1135.5
17.5°	1105.5	1108.1	1110.6	1111.7	1111.3	1110.9	1110.5	1110.1
20°	1088.0	1090.6	1093.2	1094.6	1094.9	1095.2	1095.4	1095.8
22.5°	1068.9	1072.2	1075.4	1076.9	1076.8	1076.6	1076.4	1076.3
25°	1036.5	1040.2	1043.9	1045.8	1045.8	1045.8	1045.8	1045.8
27.5°	1002.7	1005.8	1009.0	1010.7	1011.0	1011.2	1011.5	1011.7
30°	979.6	983.0	986.3	988.1	988.1	988.1	988.1	988.1
32.5°	954.4	958.1	961.6	963.8	964.5	965.2	965.9	966.5
35°	917.2	921.5	925.7	928.5	929.6	930.7	931.9	932.9
37.5°	878.6	883.5	888.3	891.1	892.1	893.0	893.9	894.8
40°	853.0	857.8	862.7	865.6	866.7	867.9	869.0	870.2
42.5°	826.2	831.5	836.8	840.2	841.8	843.4	845.0	846.6
45°	786.2	791.6	797.0	800.9	803.2	805.4	807.7	809.9
47.5°	745.8	751.9	758.0	761.9	763.6	765.4	767.2	768.9
50°	718.0	724.6	731.1	735.3	737.4	739.3	741.4	743.3
52.5°	689.7	696.5	703.3	707.9	710.4	712.8	715.3	717.7
55°	647.2	654.8	662.6	667.6	669.8	672.1	674.4	676.7
57.5°	603.7	611.5	619.2	624.4	627.1	629.8	632.5	635.1
60°	573.4	581.4	589.4	594.9	598.1	601.2	604.3	607.5
62.5°	544.7	552.7	560.7	566.1	569.0	571.9	574.9	577.7
65°	499.0	507.5	516.1	521.7	524.6	527.4	530.3	533.1
67.5°	453.4	462.8	472.1	477.9	480.4	482.7	485.1	487.5
70°	423.2	432.4	441.4	447.4	450.3	453.1	455.9	458.8
72.5°	392.9	402.3	411.6	417.7	420.5	423.4	426.2	429.1
75°	346.9	356.3	365.7	372.1	375.5	379.0	382.4	385.7
77.5°	303.8	313.7	323.7	329.9	332.6	335.2	337.8	340.4
80°	275.7	285.4	295.1	301.3	304.2	307.0	309.9	312.7
82.5°	250.1	259.8	269.4	275.7	278.5	281.4	284.2	287.1
85°	214.2	223.9	233.5	239.8	242.6	245.5	248.3	251.2
87.5°	188.1	198.0	207.8	214.3	217.2	220.1	223.1	226.0
90°	191.4	202.0	212.7	219.6	223.0	226.3	229.6	232.9
92.5°	197.6	207.8	218.0	224.3	226.7	229.0	231.3	233.7
95°	224.7	234.4	244.2	250.5	253.4	256.2	259.0	261.9
97.5°	259.3	268.8	278.3	284.5	287.3	290.0	292.8	295.5
100°	284.9	293.8	302.8	308.9	312.3	315.6	318.9	322.2
102.5°	315.5	324.2	333.0	338.7	341.4	344.2	347.0	349.7
105°	361.6	369.6	377.6	383.1	386.1	389.1	392.2	395.2
107.5°	412.1	420.4	428.8	434.1	436.3	438.5	440.8	443.0
110°	446.6	454.9	463.3	468.4	470.2	472.0	473.8	475.6



TEST NUMBER: P332231-930

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	480.1	488.4	496.8	502.1	504.5	507.0	509.3	511.8
115°	532.6	539.6	546.7	551.2	553.3	555.3	557.3	559.4
117.5°	585.1	591.8	598.5	602.7	604.2	605.8	607.3	608.9
120°	620.5	626.9	633.2	637.1	638.6	640.2	641.6	643.2
122.5°	656.5	662.2	667.9	671.5	672.8	674.1	675.5	676.8
125°	709.9	714.9	719.9	723.0	724.1	725.1	726.2	727.2
127.5°	762.5	766.8	771.1	773.7	774.6	775.4	776.3	777.1
130°	797.4	801.9	806.3	808.6	808.7	808.8	808.9	808.9
132.5°	831.2	835.3	839.4	841.7	842.4	843.0	843.7	844.4
135°	882.4	886.6	890.7	893.3	894.3	895.2	896.2	897.2
137.5°	932.6	936.1	939.6	941.7	942.2	942.7	943.2	943.8
140°	966.0	970.0	974.0	975.9	975.7	975.5	975.3	975.0
142.5°	996.5	1000.0	1003.6	1005.5	1005.7	1005.8	1005.9	1006.1
145°	1044.6	1046.6	1048.7	1049.8	1050.0	1050.2	1050.4	1050.6
147.5°	1090.7	1091.4	1092.1	1092.3	1091.8	1091.4	1091.1	1090.7
150°	1119.8	1119.8	1119.8	1119.4	1118.6	1117.7	1116.9	1116.1
152.5°	1147.6	1148.0	1148.3	1148.0	1146.9	1145.8	1144.7	1143.6
155°	1188.3	1189.3	1190.2	1189.8	1188.2	1186.6	1184.9	1183.2
157.5°	1223.3	1224.3	1225.3	1225.1	1223.8	1222.5	1221.2	1219.9
160°	1244.8	1246.0	1247.2	1247.3	1246.3	1245.5	1244.5	1243.5
162.5°	1265.1	1266.3	1267.5	1267.3	1265.8	1264.3	1262.8	1261.3
165°	1290.8	1292.2	1293.6	1293.5	1291.8	1290.2	1288.5	1286.9
167.5°	1311.6	1313.0	1314.5	1314.5	1313.0	1311.6	1310.1	1308.6
170°	1323.0	1324.6	1326.2	1326.2	1324.6	1323.0	1321.3	1319.6
172.5°	1331.9	1333.3	1334.8	1334.7	1333.1	1331.4	1329.8	1328.1
175°	1341.5	1343.0	1344.3	1344.2	1342.6	1340.9	1339.3	1337.7
177.5°	1345.8	1347.0	1348.1	1348.0	1346.6	1345.3	1344.0	1342.7
180°	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1

(END OF REPORT)