

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: P332819-940

Luminaire Tested: **S124DIW-S1020D1050U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332819-940
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-S1020D1050U940-4F0-1E-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: 7493.0 lumens
Efficiency: N/A
Efficacy: 122.4 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

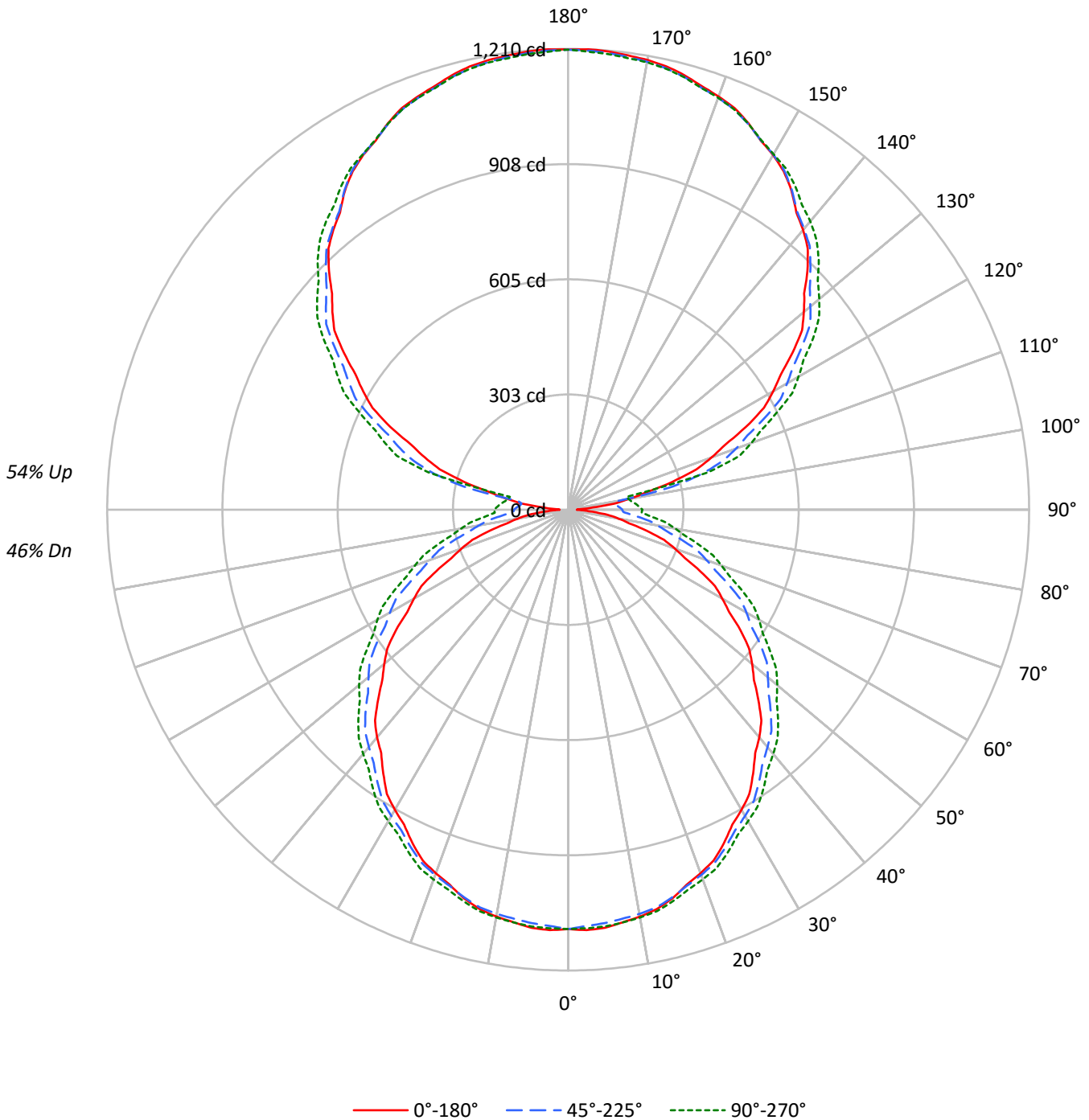
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332819-940

CATALOG NUMBER: S124DIW-S1020D1050U940-4F0-1E-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°	8888	8888	8888
5°	8916	8686	8711
10°	8861	8544	8538
15°	8782	8380	8334
20°	8662	8198	8135
25°	8527	7995	7918
30°	8381	7793	7693
35°	8216	7585	7497
40°	8083	7388	7292
45°	7887	7207	7117
50°	7721	6996	6931
55°	7549	6799	6714
60°	7282	6547	6515
65°	6989	6278	6271
70°	6633	5968	5986
75°	6136	5628	5730
80°	5588	5302	5476
85°	4893	5013	5328



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.3	1.4
10°-20°	298.7	4.0
20°-30°	451.7	6.0
30°-40°	546.5	7.3
40°-50°	577.7	7.7
50°-60°	543.7	7.3
60°-70°	451.1	6.0
70°-80°	316.9	4.2
80°-90°	182.6	2.4
90°-100°	147.7	2.0
100°-110°	342.2	4.6
110°-120°	556.8	7.4
120°-130°	669.5	8.9
130°-140°	697.3	9.3
140°-150°	642.6	8.6
150°-160°	516.1	6.9
160°-170°	332.9	4.4
170°-180°	114.7	1.5
0°-30°	854.6	11.4
0°-40°	1401.1	18.7
0°-60°	2522.6	33.7
0°-90°	3473.3	46.4
90°-120°	1046.6	14.0
90°-150°	3056.0	40.8
90°-180°	4020.0	53.6
0°-180°	7493.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1101	1101	1101	1101	1101	
5°	1102	1098	1090	1099	1098	105
15°	1057	1058	1054	1065	1064	298
25°	967	974	978	991	992	445
35°	846	860	873	889	894	529
45°	705	729	752	772	779	545
55°	552	579	615	639	647	492
65°	382	422	464	493	504	379
75°	212	258	309	343	355	226
85°	65	117	173	208	222	70
90°	22	82	142	181	195	15
95°	66	78	127	164	178	77
105°	283	314	363	399	380	297
115°	515	530	568	595	605	507
125°	719	722	750	775	784	642
135°	888	888	899	920	930	684
145°	1022	1024	1024	1032	1039	639
155°	1119	1120	1118	1121	1118	516
165°	1181	1177	1176	1183	1175	334
175°	1208	1203	1204	1210	1201	115
180°	1208	1208	1208	1208	1208	



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CATALOG NUMBER: S124DIW-S1020D1050U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1104.9	1104.3	1103.6	1103.0	1102.2	1101.1	1099.3	1097.6	1095.8	1094.0	1095.6
5°	1102.2	1101.4	1100.5	1099.7	1098.9	1097.5	1095.6	1093.7	1091.8	1089.8	1092.1
7.5°	1092.8	1092.3	1091.8	1091.4	1090.8	1089.8	1088.2	1086.6	1085.0	1083.4	1085.9
10°	1084.9	1084.7	1084.4	1084.1	1083.9	1083.0	1081.6	1080.3	1078.9	1077.5	1080.0
12.5°	1074.1	1074.1	1074.0	1073.9	1073.9	1073.4	1072.5	1071.5	1070.6	1069.6	1071.9
15°	1056.6	1056.9	1057.1	1057.4	1057.7	1057.4	1056.6	1055.8	1054.9	1054.1	1056.6
17.5°	1032.7	1033.5	1034.3	1035.1	1036.0	1036.3	1036.1	1036.0	1035.8	1035.6	1038.1
20°	1015.9	1016.7	1017.5	1018.3	1019.2	1019.8	1020.0	1020.3	1020.6	1020.8	1023.6
22.5°	997.1	998.2	999.3	1000.3	1001.3	1002.1	1002.6	1003.1	1003.5	1004.1	1006.8
25°	966.6	968.2	969.8	971.5	973.1	974.4	975.2	976.1	976.9	977.7	980.7
27.5°	932.6	935.0	937.4	939.8	942.2	944.1	945.3	946.6	947.8	949.0	951.9
30°	909.9	912.0	914.3	916.4	918.6	920.7	922.6	924.5	926.4	928.4	931.4
32.5°	885.2	887.9	890.5	893.1	895.7	898.1	900.3	902.4	904.6	906.7	910.1
35°	845.8	849.1	852.3	855.6	858.9	861.9	864.7	867.4	870.1	872.9	876.7
37.5°	806.0	809.9	813.6	817.4	821.2	824.7	828.1	831.5	835.0	838.4	842.2
40°	780.4	784.0	787.6	791.1	794.7	798.3	802.2	806.0	809.9	813.7	817.8
42.5°	750.8	754.8	758.8	762.9	766.8	771.1	775.5	780.1	784.5	789.1	793.6
45°	705.2	710.4	715.6	720.9	726.0	731.2	736.5	741.6	746.8	752.1	756.7
47.5°	661.6	666.9	672.3	677.7	683.1	688.8	694.7	700.8	706.9	712.8	717.6
50°	630.0	636.1	642.0	648.1	654.1	660.1	666.2	672.2	678.2	684.2	689.7
52.5°	598.4	604.5	610.5	616.5	622.6	629.0	635.9	642.8	649.7	656.7	662.1
55°	552.3	558.1	563.8	569.6	575.3	582.3	590.6	598.8	607.0	615.2	620.7
57.5°	500.8	507.9	515.1	522.2	529.3	536.9	545.1	553.3	561.4	569.6	576.1
60°	467.3	474.4	481.5	488.7	495.8	503.8	512.9	521.9	530.9	540.0	546.3
62.5°	434.7	442.5	450.3	458.1	465.8	474.2	483.3	492.3	501.4	510.4	516.7
65°	382.2	390.9	399.8	408.5	417.2	426.3	435.6	445.0	454.2	463.6	470.4
67.5°	331.6	341.0	350.3	359.6	368.9	378.5	388.5	398.5	408.5	418.5	425.4
70°	297.1	306.5	315.8	325.0	334.4	344.3	354.6	365.1	375.5	385.9	393.3
72.5°	263.6	273.1	282.7	292.2	301.8	312.0	323.1	334.1	345.3	356.3	363.5
75°	212.0	222.2	232.3	242.5	252.6	263.4	274.9	286.4	297.9	309.4	317.1
77.5°	164.0	174.7	185.5	196.2	207.0	218.3	230.4	242.5	254.5	266.5	274.3
80°	134.4	145.3	156.3	167.3	178.3	189.8	201.8	213.8	225.9	237.9	246.2
82.5°	104.8	116.2	127.6	139.0	150.3	162.1	174.2	186.2	198.3	210.4	218.7
85°	65.4	76.9	88.4	99.9	111.4	123.3	135.6	147.9	160.2	172.6	180.8
87.5°	37.0	48.7	60.3	71.9	83.6	95.5	107.8	120.1	132.4	144.8	152.9
90°	22.5	35.6	48.8	62.0	75.1	88.4	101.7	115.1	128.6	142.0	151.1
92.5°	30.1	40.1	50.1	60.1	70.1	81.8	95.1	108.5	121.9	135.3	144.2
95°	65.7	67.9	70.2	72.4	74.5	81.4	92.8	104.2	115.7	127.2	135.7
97.5°	120.1	132.2	144.2	156.2	168.2	168.6	157.3	146.1	134.7	123.5	130.7
100°	161.8	172.5	183.2	193.9	204.6	201.5	184.5	167.5	150.4	133.5	137.4
102.5°	209.5	218.3	227.2	236.1	245.0	252.9	259.8	266.6	273.5	280.3	250.7
105°	283.0	289.7	296.4	303.1	309.8	318.7	329.8	341.0	352.1	363.3	371.9
107.5°	353.5	358.6	363.6	368.7	373.8	381.8	392.8	403.8	414.7	425.7	433.3
110°	400.2	404.6	409.0	413.5	417.9	425.5	436.3	447.1	457.9	468.7	475.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	445.4	449.9	454.4	458.9	463.3	470.5	480.2	489.9	499.6	509.3	515.3
115°	515.1	518.2	521.3	524.3	527.4	533.2	541.8	550.4	558.9	567.5	573.9
117.5°	579.1	581.3	583.6	585.9	588.2	593.6	602.3	610.8	619.5	628.0	633.6
120°	621.4	623.0	624.6	626.3	627.9	632.6	640.3	648.1	655.9	663.6	669.5
122.5°	661.9	662.5	663.2	663.9	664.5	668.7	676.5	684.3	692.1	699.8	705.6
125°	718.6	719.2	719.7	720.2	720.8	724.2	730.8	737.2	743.6	750.0	755.9
127.5°	773.4	773.3	773.2	773.1	773.0	776.1	782.3	788.5	794.7	800.8	805.7
130°	807.8	807.7	807.6	807.5	807.4	809.9	814.9	819.9	824.9	829.9	835.0
132.5°	840.3	840.3	840.4	840.5	840.6	842.8	847.1	851.4	855.7	859.9	864.8
135°	887.9	887.7	887.4	887.3	887.1	888.3	891.0	893.8	896.4	899.2	904.0
137.5°	931.0	930.9	930.7	930.5	930.2	931.0	932.9	934.7	936.6	938.3	942.8
140°	959.2	959.4	959.5	959.6	959.7	960.1	960.8	961.5	962.2	962.9	967.0
142.5°	983.6	984.2	984.9	985.5	986.2	986.6	986.7	986.8	986.9	986.9	990.4
145°	1022.2	1022.4	1022.8	1023.1	1023.4	1023.6	1023.6	1023.6	1023.6	1023.6	1025.5
147.5°	1053.0	1053.9	1054.7	1055.6	1056.4	1056.8	1056.6	1056.4	1056.1	1056.0	1056.3
150°	1075.5	1075.9	1076.5	1077.0	1077.5	1077.7	1077.5	1077.4	1077.1	1076.9	1076.9
152.5°	1093.2	1093.9	1094.4	1095.0	1095.6	1095.7	1095.4	1095.0	1094.7	1094.3	1094.6
155°	1119.4	1119.6	1119.8	1120.0	1120.2	1120.0	1119.4	1118.8	1118.2	1117.6	1118.4
157.5°	1141.7	1141.5	1141.4	1141.2	1141.1	1140.8	1140.1	1139.3	1138.7	1138.0	1139.1
160°	1154.6	1154.1	1153.4	1152.8	1152.2	1151.8	1151.6	1151.4	1151.2	1151.0	1152.2
162.5°	1166.2	1165.5	1164.7	1163.9	1163.1	1162.6	1162.4	1162.3	1162.1	1161.8	1163.1
165°	1180.8	1179.8	1178.8	1177.8	1176.8	1176.3	1176.3	1176.3	1176.3	1176.3	1177.9
167.5°	1192.4	1191.3	1190.3	1189.3	1188.2	1187.7	1187.5	1187.4	1187.3	1187.1	1188.9
170°	1198.9	1197.7	1196.5	1195.2	1194.1	1193.6	1193.7	1194.0	1194.2	1194.4	1196.0
172.5°	1203.2	1202.0	1200.8	1199.6	1198.4	1197.9	1198.1	1198.3	1198.5	1198.7	1200.3
175°	1207.9	1206.8	1205.5	1204.3	1203.1	1202.7	1202.8	1203.0	1203.2	1203.5	1205.2
177.5°	1210.1	1209.0	1207.8	1206.8	1205.6	1205.2	1205.5	1205.9	1206.1	1206.5	1207.7
180°	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1097.2	1098.7	1100.2	1100.8	1100.6	1100.4	1100.2	1100.0
5°	1094.2	1096.4	1098.7	1099.6	1099.3	1099.0	1098.8	1098.5
7.5°	1088.4	1090.8	1093.3	1094.4	1094.1	1093.9	1093.6	1093.3
10°	1082.4	1084.9	1087.4	1088.5	1088.2	1088.0	1087.7	1087.4
12.5°	1074.2	1076.4	1078.6	1079.8	1079.7	1079.6	1079.6	1079.5
15°	1059.1	1061.5	1064.0	1065.1	1064.8	1064.5	1064.3	1064.0
17.5°	1040.6	1043.2	1045.7	1046.9	1046.6	1046.4	1046.2	1046.0
20°	1026.3	1029.0	1031.8	1033.1	1033.1	1033.1	1033.1	1033.1
22.5°	1009.5	1012.3	1015.0	1016.6	1017.1	1017.4	1017.9	1018.3
25°	983.7	986.7	989.7	991.4	991.7	991.9	992.2	992.5
27.5°	954.7	957.4	960.3	961.8	962.2	962.5	962.8	963.1
30°	934.4	937.4	940.4	942.2	942.7	943.3	943.9	944.4
32.5°	913.6	917.0	920.5	922.5	923.0	923.5	924.1	924.7
35°	880.6	884.4	888.2	890.6	891.4	892.2	893.0	893.9
37.5°	846.1	850.1	853.9	856.3	857.2	858.1	858.9	859.8
40°	821.9	826.0	830.2	832.8	833.8	834.9	836.1	837.1
42.5°	798.2	802.7	807.3	809.9	810.8	811.7	812.6	813.4
45°	761.3	766.1	770.7	773.7	775.1	776.4	777.8	779.2
47.5°	722.5	727.3	732.2	735.4	737.0	738.7	740.3	742.0
50°	695.2	700.7	706.1	709.7	711.4	713.0	714.6	716.3
52.5°	667.6	673.1	678.6	682.1	683.8	685.4	687.1	688.7
55°	626.2	631.7	637.1	640.7	642.3	644.0	645.6	647.3
57.5°	582.6	589.2	595.7	599.7	601.2	602.8	604.3	605.8
60°	552.6	558.9	565.2	569.4	571.7	573.8	576.0	578.2
62.5°	523.0	529.3	535.7	539.8	542.1	544.2	546.4	548.7
65°	477.2	484.1	491.0	495.5	497.7	499.9	502.0	504.3
67.5°	432.4	439.3	446.3	450.8	453.0	455.1	457.3	459.4
70°	400.6	408.0	415.4	420.2	422.0	424.0	425.9	427.8
72.5°	370.7	377.8	385.0	389.7	391.8	394.0	396.1	398.2
75°	324.8	332.4	340.1	345.2	347.7	350.2	352.6	355.1
77.5°	282.1	289.9	297.7	302.9	305.5	308.2	310.8	313.4
80°	254.4	262.6	270.8	276.0	278.2	280.4	282.6	284.8
82.5°	227.2	235.7	244.1	249.5	251.9	254.3	256.7	259.1
85°	189.0	197.2	205.5	211.0	213.7	216.4	219.2	221.9
87.5°	161.1	169.3	177.5	182.9	185.4	187.8	190.3	192.8
90°	160.2	169.4	178.5	184.4	187.0	189.6	192.2	194.7
92.5°	153.2	162.1	171.0	176.6	178.9	181.2	183.4	185.7
95°	144.4	152.9	161.6	167.2	169.9	172.5	175.2	177.8
97.5°	138.0	145.3	152.7	157.6	160.2	162.7	165.2	167.8
100°	141.4	145.4	149.4	152.5	154.5	156.7	158.8	161.0
102.5°	221.1	191.4	161.8	148.0	150.2	152.4	154.5	156.7
105°	380.6	389.2	397.9	399.7	394.7	389.6	384.6	379.5
107.5°	441.0	448.5	456.2	461.4	464.0	466.8	469.6	472.3
110°	482.1	488.8	495.5	500.2	503.0	505.9	508.6	511.4



TEST NUMBER: P332819-940

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	521.3	527.3	533.3	537.8	540.7	543.7	546.6	549.7
115°	580.3	586.7	593.3	597.4	599.3	601.2	603.2	605.0
117.5°	639.3	644.9	650.5	654.3	656.5	658.6	660.8	662.8
120°	675.4	681.3	687.2	691.0	692.8	694.6	696.3	698.1
122.5°	711.3	717.0	722.7	726.4	728.0	729.5	731.1	732.6
125°	761.7	767.5	773.3	777.1	779.0	780.8	782.7	784.5
127.5°	810.5	815.3	820.1	823.3	825.0	826.8	828.5	830.2
130°	840.2	845.3	850.4	853.8	855.4	857.1	858.7	860.4
132.5°	869.8	874.7	879.6	882.8	884.2	885.7	887.3	888.7
135°	908.7	913.6	918.4	921.8	923.8	925.9	927.9	930.0
137.5°	947.3	951.6	956.1	958.9	960.2	961.4	962.7	963.9
140°	971.2	975.4	979.5	982.4	983.9	985.5	987.1	988.6
142.5°	994.0	997.6	1001.1	1003.5	1004.7	1005.9	1007.1	1008.3
145°	1027.3	1029.1	1031.0	1032.7	1034.2	1035.6	1037.1	1038.7
147.5°	1056.8	1057.1	1057.5	1058.2	1059.3	1060.3	1061.4	1062.6
150°	1076.9	1076.9	1076.9	1077.0	1077.2	1077.5	1077.6	1077.8
152.5°	1094.9	1095.2	1095.6	1095.6	1095.6	1095.4	1095.3	1095.2
155°	1119.2	1120.0	1120.8	1120.9	1120.3	1119.7	1119.1	1118.5
157.5°	1140.1	1141.1	1142.2	1142.2	1141.1	1140.1	1139.1	1138.0
160°	1153.4	1154.6	1155.8	1155.8	1154.6	1153.4	1152.2	1151.0
162.5°	1164.2	1165.5	1166.6	1166.6	1165.2	1163.9	1162.5	1161.1
165°	1179.6	1181.2	1182.8	1182.6	1180.8	1179.0	1177.2	1175.4
167.5°	1190.7	1192.5	1194.2	1194.1	1192.1	1190.1	1188.1	1186.1
170°	1197.6	1199.2	1200.8	1200.6	1198.5	1196.6	1194.5	1192.6
172.5°	1201.9	1203.5	1205.1	1204.9	1202.7	1200.5	1198.4	1196.1
175°	1207.0	1208.8	1210.7	1210.3	1207.9	1205.5	1203.1	1200.7
177.5°	1209.1	1210.3	1211.7	1211.3	1209.3	1207.5	1205.5	1203.6
180°	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9	1207.9

(END OF REPORT)