

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: P332820-840

Luminaire Tested: **S124DIW-S1020D1050U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332820-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D1050U840-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1050 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7924.3 lumens
Efficiency: N/A
Efficacy: 129.5 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

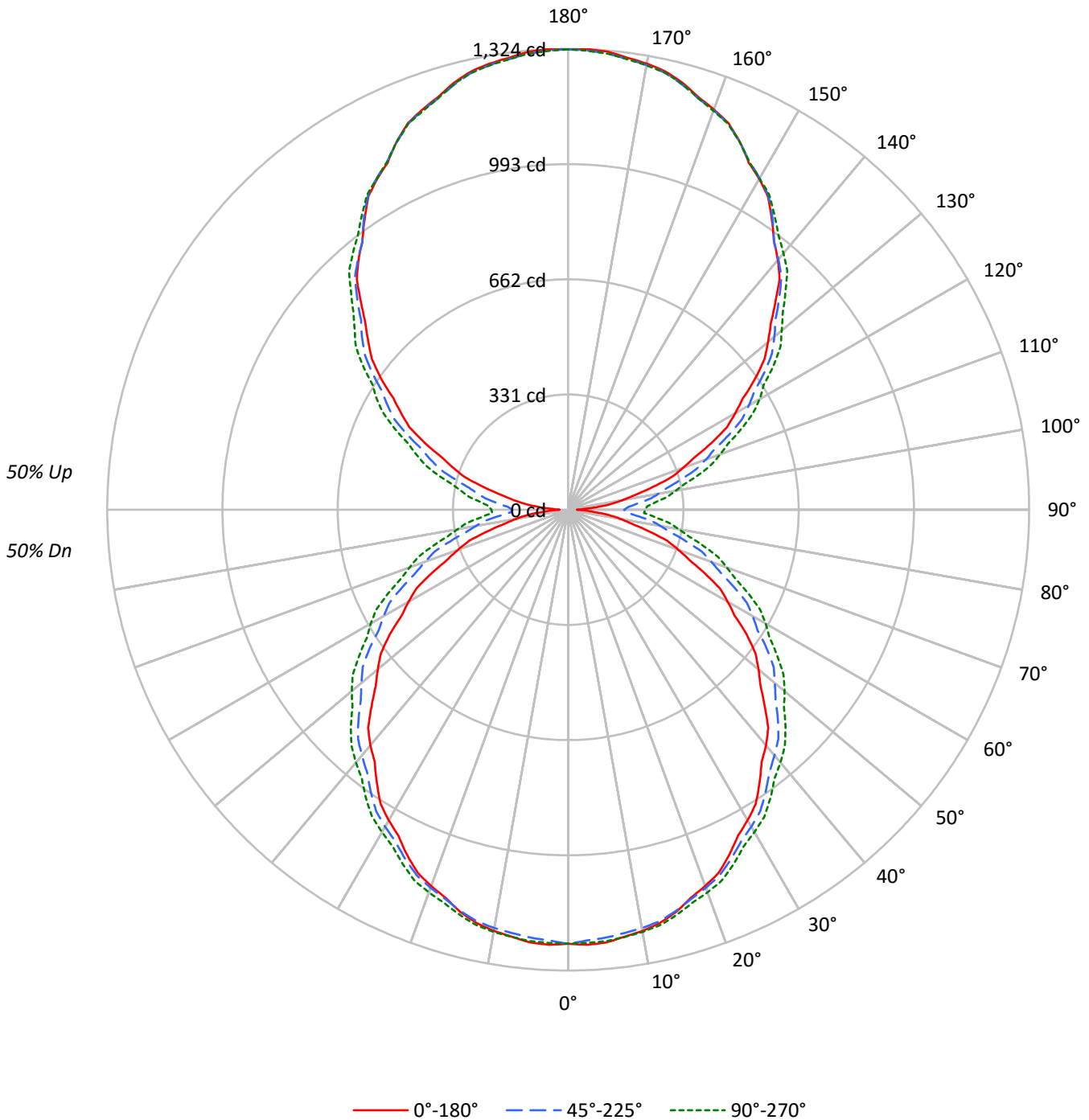
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	97	92	88	84	89	85	81	78	71	69	66	59	57	55	48	46	45	40
2	88	80	73	68	80	74	68	63	62	58	54	51	48	45	41	39	37	32
3	80	70	62	56	73	64	58	52	54	49	45	45	41	38	36	34	31	27
4	73	61	53	47	67	57	49	44	48	42	38	40	36	32	32	29	27	23
5	67	55	46	40	61	50	43	37	43	37	32	36	31	28	29	26	23	20
6	61	49	40	34	56	45	38	32	38	33	28	32	28	24	26	23	20	17
7	57	44	36	30	52	41	33	28	35	29	25	29	25	21	24	20	18	15
8	52	40	32	26	48	37	30	25	32	26	22	27	22	19	22	18	16	13
9	49	36	29	23	45	34	27	22	29	23	19	24	20	17	20	17	14	12
10	46	33	26	21	42	31	24	20	27	21	17	23	18	15	19	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10066	10066	10066
5°	10097	9838	9866
10°	10035	9677	9669
15°	9945	9490	9439
20°	9810	9285	9213
25°	9657	9054	8967
30°	9492	8825	8712
35°	9305	8591	8490
40°	9154	8367	8259
45°	8931	8161	8059
50°	8744	7924	7849
55°	8549	7700	7603
60°	8247	7415	7378
65°	7914	7109	7102
70°	7513	6760	6779
75°	6949	6374	6488
80°	6328	6004	6203
85°	5536	5679	6037



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.1	1.5
10°-20°	338.3	4.3
20°-30°	511.5	6.5
30°-40°	618.9	7.8
40°-50°	654.3	8.3
50°-60°	615.8	7.8
60°-70°	510.9	6.4
70°-80°	358.9	4.5
80°-90°	206.8	2.6
90°-100°	207.7	2.6
100°-110°	347.6	4.4
110°-120°	498.5	6.3
120°-130°	612.2	7.7
130°-140°	664.2	8.4
140°-150°	641.3	8.1
150°-160°	536.9	6.8
160°-170°	357.2	4.5
170°-180°	125.1	1.6
0°-30°	967.9	12.2
0°-40°	1586.8	20.0
0°-60°	2856.9	36.1
0°-90°	3933.5	49.6
90°-120°	1053.9	13.3
90°-150°	2971.6	37.5
90°-180°	3991.0	50.4
0°-180°	7924.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1247	1247	1247	1247	1247	
5°	1248	1244	1234	1245	1244	118
15°	1197	1198	1194	1206	1205	337
25°	1095	1103	1107	1122	1124	504
35°	958	974	989	1007	1012	600
45°	799	825	852	875	882	617
55°	626	656	697	724	733	557
65°	433	478	525	559	571	429
75°	240	292	350	388	402	255
85°	74	133	196	236	251	79
90°	25	93	161	206	221	19
95°	80	135	199	238	253	83
105°	251	281	336	372	388	267
115°	454	469	510	538	548	449
125°	655	656	688	711	718	584
135°	841	847	857	876	882	651
145°	1019	1022	1023	1030	1033	638
155°	1166	1166	1165	1169	1165	537
165°	1270	1267	1264	1270	1266	358
175°	1321	1316	1315	1321	1315	125
180°	1323	1323	1323	1323	1323	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9
2.5°	1251.3	1250.6	1249.8	1249.1	1248.3	1247.0	1245.0	1243.0	1241.0	1239.0	1240.7
5°	1248.2	1247.3	1246.4	1245.5	1244.6	1242.9	1240.8	1238.6	1236.5	1234.3	1236.8
7.5°	1237.6	1237.1	1236.5	1236.0	1235.4	1234.3	1232.4	1230.6	1228.8	1227.0	1229.8
10°	1228.7	1228.4	1228.1	1227.8	1227.5	1226.5	1225.0	1223.5	1221.8	1220.3	1223.1
12.5°	1216.4	1216.4	1216.3	1216.2	1216.2	1215.6	1214.6	1213.5	1212.4	1211.3	1214.0
15°	1196.6	1196.9	1197.2	1197.5	1197.8	1197.5	1196.6	1195.7	1194.7	1193.8	1196.6
17.5°	1169.5	1170.4	1171.3	1172.3	1173.3	1173.6	1173.4	1173.3	1173.1	1172.9	1175.7
20°	1150.5	1151.4	1152.4	1153.3	1154.3	1154.9	1155.2	1155.5	1155.8	1156.1	1159.2
22.5°	1129.2	1130.4	1131.7	1132.9	1134.0	1134.9	1135.4	1136.0	1136.5	1137.1	1140.2
25°	1094.7	1096.5	1098.3	1100.2	1102.1	1103.5	1104.4	1105.4	1106.3	1107.2	1110.6
27.5°	1056.1	1058.8	1061.6	1064.3	1067.0	1069.1	1070.6	1072.0	1073.4	1074.8	1078.0
30°	1030.5	1032.9	1035.4	1037.8	1040.4	1042.7	1044.8	1047.0	1049.1	1051.4	1054.8
32.5°	1002.5	1005.5	1008.5	1011.5	1014.4	1017.1	1019.6	1022.0	1024.4	1026.8	1030.7
35°	957.9	961.6	965.2	969.0	972.7	976.1	979.3	982.3	985.4	988.6	992.9
37.5°	912.8	917.2	921.4	925.7	930.0	934.0	937.9	941.7	945.6	949.5	953.8
40°	883.8	887.9	891.9	896.0	900.0	904.1	908.5	912.8	917.2	921.5	926.1
42.5°	850.3	854.9	859.4	863.9	868.4	873.2	878.3	883.4	888.5	893.6	898.8
45°	798.6	804.6	810.4	816.4	822.2	828.1	834.0	839.9	845.8	851.7	857.0
47.5°	749.2	755.3	761.3	767.5	773.6	780.0	786.8	793.7	800.5	807.3	812.7
50°	713.5	720.3	727.1	734.0	740.7	747.6	754.5	761.2	768.1	774.9	781.1
52.5°	677.7	684.6	691.4	698.2	705.1	712.4	720.1	728.0	735.8	743.7	749.8
55°	625.5	632.1	638.5	645.1	651.6	659.4	668.8	678.1	687.4	696.7	703.0
57.5°	567.1	575.2	583.3	591.4	599.5	608.0	617.3	626.6	635.8	645.1	652.5
60°	529.2	537.2	545.3	553.4	561.5	570.6	580.9	591.1	601.3	611.6	618.6
62.5°	492.3	501.1	510.0	518.8	527.6	537.0	547.3	557.5	567.8	578.0	585.2
65°	432.8	442.7	452.7	462.6	472.5	482.8	493.3	503.9	514.4	525.0	532.7
67.5°	375.6	386.2	396.7	407.3	417.8	428.7	440.0	451.3	462.6	473.9	481.8
70°	336.5	347.1	357.6	368.1	378.7	389.9	401.6	413.4	425.3	437.1	445.5
72.5°	298.5	309.3	320.1	330.9	341.7	353.4	365.9	378.4	391.0	403.5	411.6
75°	240.1	251.7	263.1	274.6	286.1	298.3	311.3	324.4	337.4	350.4	359.1
77.5°	185.7	197.8	210.1	222.2	234.4	247.2	260.9	274.6	288.2	301.8	310.6
80°	152.2	164.6	177.0	189.5	201.9	214.9	228.5	242.2	255.8	269.4	278.8
82.5°	118.7	131.6	144.5	157.4	170.3	183.6	197.2	210.9	224.6	238.2	247.7
85°	74.0	87.1	100.1	113.1	126.1	139.7	153.6	167.5	181.5	195.5	204.8
87.5°	41.9	55.1	68.3	81.4	94.6	108.2	122.1	136.0	150.0	164.0	173.2
90°	25.4	40.3	55.2	70.2	85.0	100.1	115.2	130.4	145.6	160.8	171.1
92.5°	43.1	57.2	71.2	85.2	99.3	113.6	128.2	142.8	157.4	172.1	181.6
95°	79.6	91.8	104.1	116.4	128.7	142.0	156.3	170.6	184.9	199.2	208.2
97.5°	123.7	134.1	144.6	155.0	165.5	177.9	192.4	206.8	221.4	235.8	244.7
100°	158.5	167.5	176.5	185.5	194.5	206.0	220.2	234.4	248.5	262.7	271.5
102.5°	196.2	203.7	211.1	218.5	226.0	236.6	250.2	264.0	277.7	291.4	300.2
105°	251.0	257.4	263.8	270.2	276.7	286.1	298.5	310.8	323.3	335.7	344.1
107.5°	311.0	316.4	321.7	327.1	332.4	340.6	351.6	362.6	373.7	384.7	392.9
110°	350.8	355.6	360.4	365.2	370.0	377.7	388.4	399.0	409.6	420.3	427.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	392.2	396.2	400.1	404.0	408.0	415.0	425.0	434.8	444.8	454.7	461.6
115°	454.4	457.2	460.0	462.8	465.5	471.7	481.2	490.7	500.2	509.6	516.2
117.5°	514.3	516.1	518.1	519.9	521.7	527.1	536.0	545.0	553.9	562.8	568.6
120°	553.3	555.1	556.9	558.8	560.7	565.7	574.0	582.4	590.7	599.0	604.1
122.5°	595.0	595.6	596.1	596.6	597.2	601.6	609.8	617.9	626.1	634.3	639.7
125°	655.2	654.9	654.6	654.3	654.0	657.6	665.1	672.7	680.1	687.7	693.2
127.5°	710.7	711.1	711.6	712.0	712.3	715.3	720.8	726.5	732.1	737.6	742.8
130°	748.9	749.3	749.7	750.0	750.4	753.2	758.1	763.1	768.0	773.0	778.1
132.5°	789.1	789.2	789.4	789.6	789.8	791.8	795.6	799.4	803.1	807.0	811.8
135°	840.6	842.0	843.3	844.8	846.1	847.9	850.1	852.2	854.4	856.6	861.1
137.5°	898.4	898.7	899.0	899.4	899.7	900.5	901.9	903.3	904.8	906.3	910.2
140°	936.9	937.0	937.2	937.3	937.4	937.7	938.0	938.3	938.6	938.9	942.7
142.5°	970.9	971.3	971.7	972.1	972.5	972.5	972.1	971.8	971.4	971.0	974.5
145°	1019.4	1020.0	1020.5	1021.1	1021.7	1022.1	1022.4	1022.6	1022.8	1023.0	1024.7
147.5°	1067.6	1068.3	1069.1	1070.0	1070.8	1071.1	1070.9	1070.7	1070.5	1070.3	1070.4
150°	1097.1	1097.6	1098.2	1098.8	1099.4	1099.7	1099.7	1099.7	1099.7	1099.7	1099.7
152.5°	1123.8	1124.3	1124.8	1125.2	1125.7	1126.0	1126.2	1126.4	1126.6	1126.8	1127.3
155°	1166.3	1166.3	1166.3	1166.3	1166.3	1166.2	1165.9	1165.7	1165.5	1165.3	1166.2
157.5°	1202.2	1201.8	1201.4	1201.0	1200.6	1200.4	1200.3	1200.3	1200.2	1200.2	1200.9
160°	1223.6	1223.4	1223.0	1222.8	1222.6	1222.4	1222.1	1221.9	1221.7	1221.5	1222.1
162.5°	1243.1	1242.6	1242.0	1241.4	1240.8	1240.4	1240.2	1240.0	1239.7	1239.5	1240.7
165°	1269.6	1268.9	1268.2	1267.6	1266.9	1266.3	1265.9	1265.4	1265.0	1264.5	1265.9
167.5°	1289.8	1288.9	1288.0	1287.0	1286.1	1285.6	1285.7	1285.7	1285.7	1285.8	1287.1
170°	1301.3	1300.2	1299.0	1297.9	1296.8	1296.3	1296.6	1296.8	1297.0	1297.2	1298.6
172.5°	1309.5	1308.5	1307.6	1306.7	1305.7	1305.3	1305.3	1305.4	1305.4	1305.4	1307.0
175°	1320.7	1319.6	1318.5	1317.4	1316.2	1315.6	1315.2	1315.0	1314.8	1314.6	1316.2
177.5°	1324.4	1323.5	1322.6	1321.7	1320.8	1320.3	1320.3	1320.3	1320.3	1320.3	1321.6
180°	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9	1246.9
2.5°	1242.5	1244.3	1246.0	1246.7	1246.5	1246.2	1246.0	1245.8
5°	1239.2	1241.7	1244.3	1245.3	1245.0	1244.7	1244.4	1244.1
7.5°	1232.6	1235.4	1238.2	1239.4	1239.1	1238.8	1238.5	1238.2
10°	1225.9	1228.7	1231.5	1232.7	1232.4	1232.1	1231.8	1231.5
12.5°	1216.5	1219.0	1221.5	1222.8	1222.7	1222.6	1222.6	1222.5
15°	1199.4	1202.1	1205.0	1206.2	1205.9	1205.6	1205.3	1205.0
17.5°	1178.5	1181.4	1184.3	1185.6	1185.3	1185.1	1184.8	1184.6
20°	1162.3	1165.4	1168.5	1170.0	1170.0	1170.0	1170.0	1170.0
22.5°	1143.3	1146.4	1149.5	1151.3	1151.9	1152.3	1152.8	1153.3
25°	1114.1	1117.4	1120.8	1122.8	1123.1	1123.4	1123.7	1124.0
27.5°	1081.2	1084.3	1087.5	1089.2	1089.6	1090.0	1090.4	1090.8
30°	1058.2	1061.6	1065.0	1067.0	1067.6	1068.2	1068.9	1069.5
32.5°	1034.6	1038.5	1042.5	1044.7	1045.3	1045.9	1046.5	1047.2
35°	997.2	1001.6	1005.9	1008.6	1009.5	1010.4	1011.4	1012.3
37.5°	958.3	962.7	967.0	969.8	970.8	971.8	972.7	973.7
40°	930.8	935.4	940.2	943.1	944.3	945.5	946.8	948.1
42.5°	903.9	909.1	914.2	917.3	918.3	919.3	920.3	921.2
45°	862.2	867.6	872.8	876.3	877.8	879.3	880.9	882.4
47.5°	818.2	823.6	829.2	832.8	834.7	836.6	838.4	840.3
50°	787.3	793.6	799.7	803.8	805.7	807.5	809.3	811.2
52.5°	756.1	762.2	768.5	772.4	774.4	776.2	778.1	779.9
55°	709.1	715.4	721.5	725.6	727.4	729.3	731.1	733.1
57.5°	659.8	667.2	674.6	679.1	680.9	682.7	684.4	686.1
60°	625.8	633.0	640.1	644.9	647.4	649.8	652.4	654.8
62.5°	592.3	599.5	606.6	611.4	613.9	616.3	618.8	621.4
65°	540.5	548.3	556.0	561.2	563.6	566.1	568.6	571.1
67.5°	489.7	497.6	505.4	510.6	513.0	515.4	517.9	520.3
70°	453.7	462.1	470.5	475.8	478.0	480.2	482.3	484.5
72.5°	419.8	427.9	436.1	441.3	443.7	446.2	448.6	451.0
75°	367.8	376.5	385.2	390.9	393.7	396.6	399.3	402.1
77.5°	319.5	328.3	337.1	343.1	346.0	349.0	351.9	355.0
80°	288.1	297.4	306.7	312.6	315.1	317.6	320.0	322.6
82.5°	257.3	266.9	276.4	282.6	285.3	288.0	290.7	293.5
85°	214.1	223.4	232.7	238.9	242.1	245.1	248.2	251.4
87.5°	182.5	191.8	201.1	207.1	210.0	212.7	215.5	218.3
90°	181.5	191.8	202.2	208.8	211.8	214.7	217.6	220.6
92.5°	191.2	200.8	210.4	216.5	219.2	222.0	224.7	227.5
95°	217.3	226.4	235.5	241.4	244.2	247.0	249.7	252.6
97.5°	253.7	262.7	271.6	277.4	280.0	282.8	285.4	288.0
100°	280.3	289.1	298.0	303.5	305.7	307.8	310.0	312.1
102.5°	308.9	317.7	326.5	332.1	334.8	337.4	340.0	342.5
105°	352.5	360.9	369.4	375.2	378.4	381.5	384.7	387.9
107.5°	401.1	409.4	417.7	422.9	425.2	427.3	429.5	431.7
110°	433.6	440.3	447.0	451.9	455.0	458.3	461.4	464.5



TEST NUMBER: P332820-840

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	468.4	475.1	482.0	486.7	489.3	491.9	494.5	497.2
115°	522.8	529.4	536.0	540.3	542.2	544.2	546.1	548.1
117.5°	574.2	579.9	585.5	589.4	591.5	593.5	595.5	597.5
120°	609.2	614.2	619.2	623.3	626.2	629.1	632.1	635.0
122.5°	645.2	650.7	656.0	659.4	660.9	662.3	663.7	665.1
125°	698.6	704.0	709.4	712.9	714.3	715.7	717.1	718.5
127.5°	747.9	753.1	758.2	761.6	763.4	765.1	766.8	768.6
130°	783.3	788.4	793.5	796.6	797.5	798.4	799.4	800.3
132.5°	816.8	821.6	826.5	829.7	831.2	832.6	834.1	835.7
135°	865.6	870.1	874.6	877.5	878.7	879.8	881.0	882.2
137.5°	914.1	918.1	922.0	924.7	926.5	928.2	929.9	931.5
140°	946.4	950.3	954.1	956.6	958.0	959.3	960.6	962.0
142.5°	978.0	981.5	985.0	987.3	988.7	989.9	991.1	992.4
145°	1026.3	1027.9	1029.6	1030.7	1031.3	1031.8	1032.4	1032.9
147.5°	1070.5	1070.5	1070.6	1071.0	1071.8	1072.5	1073.3	1074.1
150°	1099.7	1099.7	1099.7	1099.6	1099.4	1099.2	1098.9	1098.7
152.5°	1127.8	1128.4	1128.9	1128.9	1128.3	1127.7	1127.1	1126.6
155°	1167.1	1168.0	1168.9	1168.9	1168.0	1167.1	1166.2	1165.3
157.5°	1201.6	1202.2	1203.0	1203.0	1202.1	1201.3	1200.6	1199.8
160°	1222.8	1223.6	1224.3	1224.0	1222.8	1221.7	1220.6	1219.4
162.5°	1241.9	1243.1	1244.5	1244.5	1243.3	1242.2	1241.0	1239.9
165°	1267.2	1268.6	1269.9	1270.1	1269.2	1268.3	1267.4	1266.5
167.5°	1288.5	1289.8	1291.2	1291.2	1289.8	1288.4	1287.0	1285.6
170°	1299.9	1301.3	1302.6	1302.5	1301.0	1299.4	1297.8	1296.2
172.5°	1308.5	1310.0	1311.6	1311.5	1310.0	1308.4	1306.8	1305.1
175°	1317.8	1319.4	1321.0	1321.0	1319.4	1317.8	1316.2	1314.6
177.5°	1322.9	1324.1	1325.4	1325.3	1323.8	1322.4	1321.0	1319.5
180°	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8

(END OF REPORT)