

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: P332236-940

Luminaire Tested: **S123DIW-S1165D1535U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332236-940
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-S1165D1535U940-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9801.0 lumens
Efficiency: N/A
Efficacy: 118.2 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

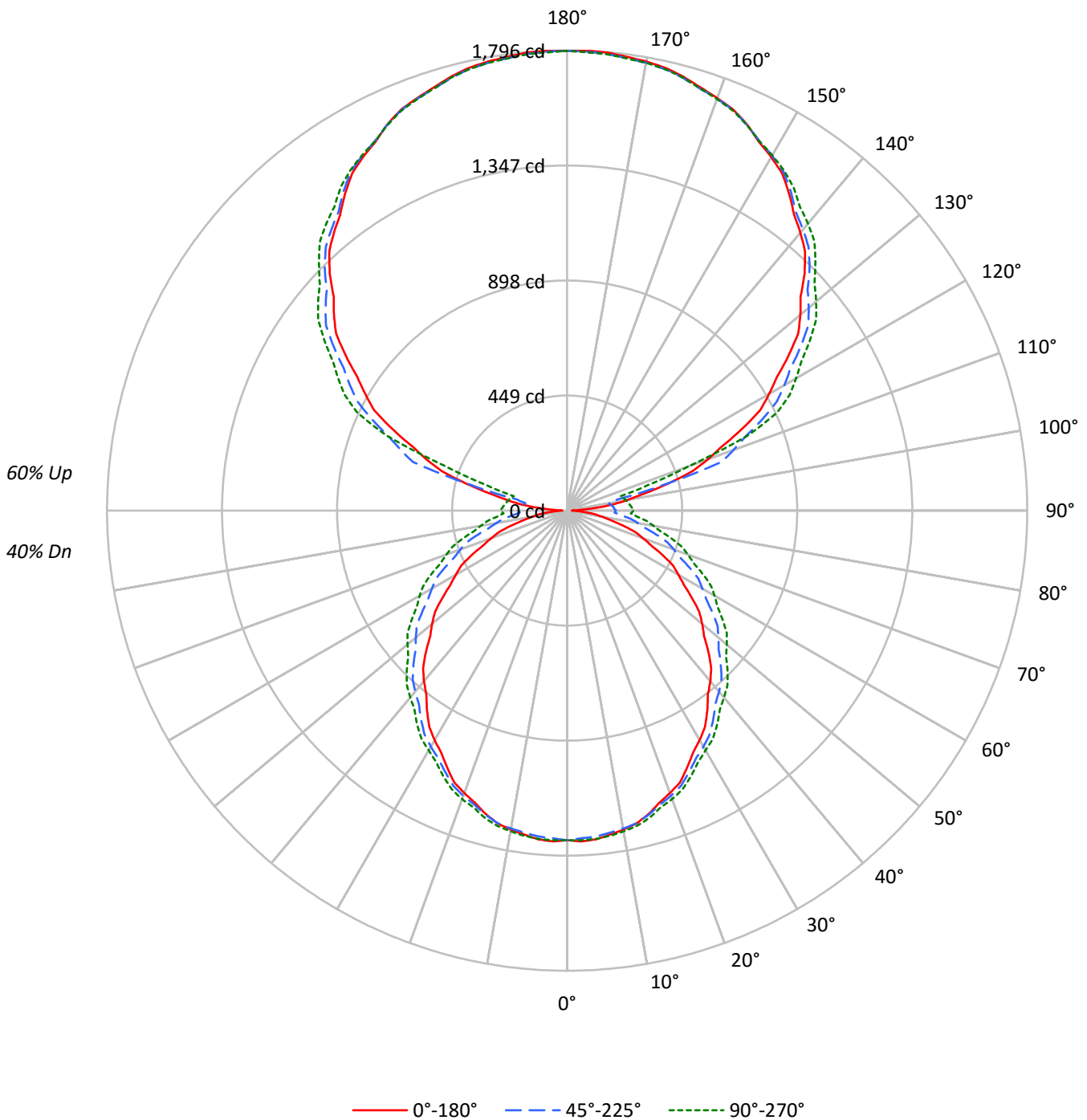
Input Watts (W): 82.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	105	105	105	105	96	96	96	96	78	78	78	62	62	62	47	47	47	40				
1	95	90	86	82	86	82	79	75	67	65	62	53	51	50	40	39	38	32				
2	86	78	72	66	78	71	66	61	58	54	51	46	43	41	35	33	32	26				
3	78	68	61	55	71	62	56	51	51	46	42	41	37	34	31	28	26	22				
4	71	60	52	46	65	55	48	43	45	40	36	36	32	29	27	25	23	19				
5	65	54	45	39	59	49	42	36	40	35	31	32	28	25	25	22	20	16				
6	60	48	40	34	54	44	37	31	36	31	27	29	25	22	22	19	17	14				
7	55	43	35	30	50	40	32	27	33	27	23	26	22	19	20	17	15	12				
8	51	39	31	26	47	36	29	24	30	24	21	24	20	17	19	16	13	11				
9	48	36	28	23	43	33	26	21	27	22	18	22	18	15	17	14	12	10				
10	45	33	25	21	41	30	23	19	25	20	16	20	16	14	16	13	11	9				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13850	13850	13850
5°	13894	13501	13509
10°	13769	13190	13124
15°	13592	12837	12705
20°	13338	12435	12243
25°	13025	11969	11757
30°	12705	11553	11264
35°	12344	11111	10871
40°	12002	10709	10450
45°	11622	10323	10113
50°	11245	9942	9744
55°	10831	9553	9410
60°	10426	9156	9068
65°	10013	8733	8661
70°	9389	8257	8243
75°	8597	7713	7819
80°	7695	7181	7334
85°	6853	6811	7053



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.0	1.2
10°-20°	347.7	3.5
20°-30°	520.1	5.3
30°-40°	621.1	6.3
40°-50°	649.8	6.6
50°-60°	609.8	6.2
60°-70°	509.3	5.2
70°-80°	364.4	3.7
80°-90°	222.3	2.3
90°-100°	201.6	2.1
100°-110°	411.1	4.2
110°-120°	813.7	8.3
120°-130°	989.2	10.1
130°-140°	1033.3	10.5
140°-150°	953.9	9.7
150°-160°	766.5	7.8
160°-170°	494.7	5.0
170°-180°	170.5	1.7
0°-30°	989.8	10.1
0°-40°	1610.9	16.4
0°-60°	2870.5	29.3
0°-90°	3966.5	40.5
90°-120°	1426.4	14.6
90°-150°	4402.8	44.9
90°-180°	5834.0	59.5
0°-180°	9801.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1287	1287	1287	1287	1287	
5°	1288	1285	1277	1287	1287	122
15°	1226	1230	1229	1242	1242	345
25°	1107	1121	1126	1143	1144	510
35°	953	975	994	1014	1020	596
45°	779	813	848	874	886	601
55°	594	641	691	727	740	532
65°	411	466	527	568	583	406
75°	223	289	359	403	422	238
85°	69	139	213	259	275	72
90°	20	102	190	241	260	16
95°	97	101	180	231	247	113
105°	408	451	397	212	216	433
115°	752	779	840	885	903	743
125°	1055	1067	1111	1142	1156	942
135°	1310	1318	1338	1366	1370	1009
145°	1510	1518	1521	1534	1540	945
155°	1662	1660	1661	1667	1660	766
165°	1753	1749	1748	1757	1749	495
175°	1794	1788	1789	1797	1788	171
180°	1794	1794	1794	1794	1794	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7
2.5°	1292.4	1291.6	1290.8	1290.1	1289.3	1288.0	1286.0	1284.0	1282.0	1280.1	1282.0
5°	1288.2	1287.5	1286.9	1286.3	1285.7	1284.4	1282.5	1280.7	1278.8	1276.9	1279.4
7.5°	1275.5	1275.7	1275.8	1275.9	1276.0	1275.2	1273.4	1271.6	1269.8	1267.9	1271.0
10°	1264.4	1265.0	1265.6	1266.2	1266.9	1266.3	1264.8	1263.2	1261.7	1260.1	1263.2
12.5°	1250.9	1251.7	1252.6	1253.5	1254.4	1254.3	1253.2	1252.1	1251.1	1250.0	1252.9
15°	1226.5	1227.4	1228.3	1229.3	1230.2	1230.6	1230.2	1229.9	1229.6	1229.3	1232.4
17.5°	1195.6	1197.5	1199.4	1201.2	1203.1	1204.0	1203.9	1203.7	1203.6	1203.5	1206.3
20°	1173.2	1175.1	1177.0	1178.8	1180.7	1182.0	1182.6	1183.2	1183.8	1184.5	1187.2
22.5°	1149.7	1151.6	1153.4	1155.3	1157.2	1158.5	1159.4	1160.3	1161.1	1162.0	1165.6
25°	1107.3	1110.4	1113.6	1116.7	1119.8	1121.8	1122.8	1123.6	1124.6	1125.5	1129.6
27.5°	1064.7	1068.3	1071.8	1075.4	1078.9	1081.7	1083.7	1085.7	1087.7	1089.7	1093.1
30°	1034.5	1038.5	1042.5	1046.6	1050.6	1053.9	1056.4	1058.9	1061.4	1063.9	1067.6
32.5°	1000.8	1005.3	1009.9	1014.4	1019.0	1022.9	1026.1	1029.4	1032.6	1035.8	1039.8
35°	953.1	958.1	963.1	968.1	973.1	977.6	981.7	985.7	989.7	993.8	998.4
37.5°	902.7	908.3	913.9	919.5	925.1	930.4	935.4	940.4	945.4	950.4	955.6
40°	869.1	874.7	880.3	885.8	891.4	897.4	903.7	909.8	916.1	922.3	927.6
42.5°	832.1	838.9	845.8	852.6	859.4	866.1	872.6	879.0	885.6	892.1	897.9
45°	779.4	786.8	794.2	801.7	809.2	816.9	824.7	832.4	840.3	848.0	853.9
47.5°	724.1	732.5	741.0	749.6	758.0	766.7	775.6	784.5	793.4	802.4	809.0
50°	688.2	697.0	705.7	714.3	723.1	732.3	742.0	751.6	761.3	770.9	778.1
52.5°	650.1	659.3	668.5	677.8	687.0	697.0	707.6	718.2	728.9	739.5	747.0
55°	594.3	604.6	614.8	625.2	635.4	646.1	657.4	668.6	679.8	691.1	699.5
57.5°	539.9	550.6	561.3	572.0	582.8	594.3	606.5	618.8	631.1	643.4	651.8
60°	501.8	513.0	524.2	535.5	546.6	558.7	571.4	584.2	597.0	609.8	618.5
62.5°	465.9	477.4	488.8	500.3	511.8	524.2	537.8	551.3	564.8	578.4	587.0
65°	410.7	422.8	435.0	447.1	459.3	472.3	485.9	499.6	513.4	527.0	536.4
67.5°	354.6	367.6	380.4	393.3	406.2	419.6	433.5	447.5	461.5	475.5	485.6
70°	315.4	328.8	342.1	355.5	369.0	383.2	398.1	413.0	428.0	442.9	452.9
72.5°	279.5	292.9	306.3	319.7	333.1	347.5	362.9	378.4	393.9	409.3	419.5
75°	222.8	237.6	252.2	266.8	281.4	296.5	312.1	327.7	343.2	358.8	369.1
77.5°	173.5	188.3	203.0	217.8	232.6	247.8	263.5	279.2	294.9	310.6	321.5
80°	138.8	154.0	169.3	184.6	199.8	215.5	231.8	248.0	264.1	280.4	291.0
82.5°	108.5	124.0	139.6	155.1	170.5	186.5	203.0	219.5	235.9	252.3	262.9
85°	68.7	84.3	99.9	115.4	131.0	147.0	163.5	180.0	196.5	213.0	223.6
87.5°	37.5	53.7	69.7	85.9	102.0	118.3	135.0	151.7	168.4	184.9	195.8
90°	19.5	37.8	56.0	74.2	92.5	111.5	131.2	150.9	170.7	190.4	202.2
92.5°	41.9	54.8	67.8	80.7	93.6	109.4	128.0	146.5	165.0	183.5	195.8
95°	96.8	96.8	96.8	96.8	96.8	106.0	124.6	143.0	161.6	180.1	191.8
97.5°	177.2	182.7	188.2	193.7	199.2	198.6	191.9	185.1	178.3	171.6	183.2
100°	237.9	253.8	269.7	285.6	301.5	293.5	261.6	229.7	197.8	165.9	177.4
102.5°	307.2	320.4	333.7	346.9	360.2	348.6	312.1	275.7	239.3	203.0	204.4
105°	408.5	419.2	430.0	440.7	451.4	450.1	436.8	423.7	410.4	397.1	353.4
107.5°	514.0	522.9	531.9	540.8	549.8	562.8	579.7	596.6	613.5	630.4	600.3
110°	584.3	592.3	600.3	608.2	616.2	628.0	643.8	659.5	675.2	690.9	689.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	652.6	659.3	666.0	672.8	679.6	690.5	705.7	720.9	736.2	751.4	759.4
115°	752.2	757.7	763.2	768.7	774.3	784.0	797.8	811.7	825.6	839.5	849.9
117.5°	849.8	854.3	858.8	863.3	867.7	875.9	887.9	899.7	911.6	923.5	933.3
120°	909.5	913.6	917.9	922.1	926.3	934.1	945.2	956.4	967.5	978.7	988.3
122.5°	971.3	974.3	977.3	980.3	983.3	990.2	1001.1	1012.1	1023.0	1033.8	1042.5
125°	1054.7	1057.0	1059.4	1061.8	1064.2	1070.5	1080.7	1090.9	1101.1	1111.3	1118.5
127.5°	1136.8	1138.9	1140.9	1143.0	1145.0	1150.5	1159.4	1168.3	1177.2	1186.1	1193.2
130°	1188.0	1190.1	1192.1	1194.2	1196.2	1201.0	1208.4	1215.8	1223.2	1230.7	1237.7
132.5°	1235.9	1238.2	1240.5	1242.9	1245.2	1249.3	1255.2	1261.1	1267.0	1273.0	1279.9
135°	1310.5	1312.1	1313.5	1315.0	1316.4	1319.5	1324.1	1328.6	1333.3	1337.9	1344.4
137.5°	1374.3	1376.3	1378.3	1380.3	1382.2	1384.6	1387.1	1389.7	1392.3	1394.9	1401.2
140°	1415.8	1417.6	1419.3	1421.1	1422.9	1424.7	1426.6	1428.3	1430.2	1432.0	1437.9
142.5°	1455.3	1456.8	1458.3	1459.8	1461.4	1462.7	1463.7	1464.8	1465.9	1467.0	1472.1
145°	1510.5	1512.3	1513.9	1515.7	1517.5	1518.7	1519.3	1519.8	1520.5	1521.1	1524.1
147.5°	1561.0	1562.5	1563.8	1565.1	1566.5	1567.4	1568.1	1568.7	1569.2	1569.9	1571.2
150°	1593.0	1593.9	1594.8	1595.7	1596.6	1597.3	1597.9	1598.6	1599.1	1599.7	1600.3
152.5°	1621.8	1622.3	1622.6	1623.1	1623.5	1623.9	1624.3	1624.6	1625.0	1625.3	1626.4
155°	1662.3	1661.8	1661.2	1660.6	1660.0	1659.8	1660.2	1660.5	1660.7	1661.0	1662.5
157.5°	1693.8	1693.8	1693.7	1693.6	1693.6	1693.4	1693.1	1692.8	1692.6	1692.2	1694.0
160°	1713.1	1712.7	1712.4	1712.2	1711.8	1711.5	1711.3	1710.9	1710.7	1710.4	1712.2
162.5°	1731.2	1730.4	1729.7	1728.8	1728.0	1727.5	1727.2	1727.0	1726.6	1726.4	1728.4
165°	1753.0	1752.1	1751.2	1750.3	1749.4	1748.9	1748.6	1748.3	1748.0	1747.7	1750.1
167.5°	1770.0	1768.9	1767.7	1766.6	1765.3	1764.8	1764.8	1764.8	1764.8	1764.8	1767.1
170°	1779.7	1778.5	1777.3	1776.1	1775.0	1774.3	1774.3	1774.3	1774.3	1774.3	1776.7
172.5°	1786.1	1784.7	1783.2	1781.8	1780.4	1779.8	1780.0	1780.3	1780.5	1780.7	1783.2
175°	1794.3	1792.9	1791.4	1789.9	1788.4	1787.8	1788.1	1788.4	1788.7	1789.0	1791.1
177.5°	1796.4	1795.3	1794.1	1793.0	1791.7	1791.3	1791.5	1791.7	1792.0	1792.2	1794.1
180°	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7	1286.7
2.5°	1284.0	1286.0	1288.0	1288.9	1288.6	1288.3	1288.1	1287.9
5°	1281.9	1284.4	1286.9	1288.0	1287.7	1287.4	1287.1	1286.7
7.5°	1274.2	1277.3	1280.4	1281.8	1281.4	1281.0	1280.7	1280.3
10°	1266.3	1269.4	1272.6	1273.8	1273.2	1272.6	1271.9	1271.3
12.5°	1255.8	1258.6	1261.5	1262.6	1261.9	1261.3	1260.7	1260.1
15°	1235.5	1238.6	1241.7	1243.1	1242.9	1242.5	1242.2	1241.9
17.5°	1209.1	1211.9	1214.7	1215.8	1215.5	1215.0	1214.6	1214.2
20°	1190.0	1192.8	1195.6	1197.2	1197.5	1197.8	1198.1	1198.5
22.5°	1169.1	1172.7	1176.2	1177.9	1177.7	1177.5	1177.3	1177.1
25°	1133.6	1137.7	1141.7	1143.8	1143.8	1143.8	1143.8	1143.8
27.5°	1096.6	1100.1	1103.6	1105.5	1105.7	1106.0	1106.3	1106.5
30°	1071.4	1075.1	1078.8	1080.7	1080.7	1080.7	1080.7	1080.7
32.5°	1043.8	1047.8	1051.8	1054.2	1054.9	1055.7	1056.4	1057.1
35°	1003.2	1007.8	1012.4	1015.5	1016.7	1018.0	1019.2	1020.4
37.5°	960.9	966.3	971.5	974.6	975.7	976.7	977.7	978.7
40°	932.9	938.2	943.5	946.7	948.0	949.2	950.5	951.7
42.5°	903.7	909.5	915.3	919.0	920.7	922.5	924.2	926.0
45°	859.9	865.8	871.7	875.9	878.4	880.9	883.4	885.8
47.5°	815.6	822.3	829.0	833.3	835.2	837.1	839.1	841.0
50°	785.2	792.5	799.6	804.2	806.5	808.6	810.8	813.0
52.5°	754.4	761.8	769.2	774.3	776.9	779.6	782.3	785.0
55°	707.8	716.2	724.7	730.1	732.6	735.1	737.6	740.1
57.5°	660.3	668.8	677.3	683.0	685.9	688.8	691.8	694.6
60°	627.1	635.9	644.6	650.7	654.2	657.5	660.9	664.4
62.5°	595.8	604.5	613.2	619.2	622.3	625.5	628.7	631.9
65°	545.7	555.1	564.5	570.6	573.7	576.8	580.0	583.1
67.5°	495.9	506.1	516.3	522.7	525.4	528.0	530.6	533.2
70°	462.9	472.9	482.8	489.4	492.5	495.6	498.6	501.8
72.5°	429.7	440.0	450.1	456.8	459.9	463.1	466.2	469.3
75°	379.4	389.7	399.9	407.0	410.7	414.5	418.2	421.9
77.5°	332.3	343.1	354.0	360.8	363.7	366.6	369.4	372.3
80°	301.5	312.1	322.7	329.6	332.7	335.8	338.9	342.0
82.5°	273.5	284.1	294.6	301.5	304.6	307.7	310.9	314.0
85°	234.3	244.9	255.4	262.3	265.4	268.5	271.6	274.7
87.5°	206.6	217.5	228.3	235.3	238.5	241.7	245.0	248.3
90°	213.9	225.7	237.5	245.2	249.0	252.6	256.4	260.0
92.5°	208.0	220.3	232.5	240.2	243.4	246.6	249.9	253.1
95°	203.6	215.3	227.0	234.4	237.6	240.7	243.8	246.9
97.5°	194.9	206.5	218.2	225.8	229.2	232.6	235.9	239.4
100°	188.8	200.2	211.5	218.9	222.4	225.8	229.2	232.6
102.5°	205.8	207.2	208.7	211.2	214.9	218.6	222.2	225.8
105°	309.7	265.9	222.2	202.1	205.5	208.8	212.2	215.6
107.5°	570.2	540.1	510.0	476.5	439.8	403.0	366.2	329.5
110°	687.6	685.9	684.2	663.4	623.6	583.7	543.9	504.0



TEST NUMBER: P332236-940

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	767.4	775.4	783.5	784.4	778.2	772.0	765.8	759.6
115°	860.3	870.8	881.3	888.3	892.0	895.6	899.3	903.0
117.5°	943.1	952.9	962.7	968.8	971.5	974.2	976.9	979.5
120°	997.7	1007.3	1016.8	1022.7	1024.8	1027.1	1029.2	1031.4
122.5°	1051.1	1059.6	1068.2	1073.7	1076.1	1078.5	1080.9	1083.3
125°	1125.6	1132.7	1139.9	1144.8	1147.6	1150.4	1153.2	1155.9
127.5°	1200.3	1207.5	1214.6	1218.9	1220.4	1221.9	1223.4	1225.0
130°	1244.8	1252.0	1259.0	1263.2	1264.5	1265.8	1267.0	1268.4
132.5°	1286.7	1293.6	1300.4	1304.5	1305.8	1307.1	1308.3	1309.7
135°	1350.9	1357.4	1363.9	1367.4	1368.2	1368.8	1369.5	1370.1
137.5°	1407.6	1413.9	1420.3	1424.0	1424.9	1425.8	1426.8	1427.8
140°	1443.8	1449.6	1455.5	1458.8	1459.8	1460.8	1461.8	1462.7
142.5°	1477.2	1482.4	1487.5	1490.4	1491.1	1491.8	1492.5	1493.3
145°	1527.2	1530.4	1533.4	1535.5	1536.8	1538.0	1539.3	1540.5
147.5°	1572.5	1573.9	1575.2	1575.7	1575.5	1575.3	1575.0	1574.8
150°	1600.9	1601.5	1602.0	1602.2	1602.0	1601.7	1601.4	1601.2
152.5°	1627.5	1628.5	1629.6	1629.5	1628.3	1627.0	1625.8	1624.5
155°	1664.0	1665.4	1667.0	1666.8	1665.0	1663.2	1661.4	1659.7
157.5°	1695.8	1697.5	1699.3	1699.1	1696.7	1694.4	1692.1	1689.8
160°	1714.0	1715.7	1717.4	1717.3	1715.2	1713.2	1711.1	1709.1
162.5°	1730.4	1732.4	1734.4	1734.5	1732.7	1730.8	1729.0	1727.2
165°	1752.4	1754.8	1757.2	1757.3	1755.2	1753.2	1751.1	1749.0
167.5°	1769.5	1771.8	1774.2	1774.2	1771.8	1769.5	1767.1	1764.8
170°	1779.1	1781.5	1783.9	1783.9	1781.5	1779.1	1776.7	1774.3
172.5°	1785.5	1787.9	1790.2	1790.1	1787.5	1784.9	1782.3	1779.7
175°	1793.1	1795.2	1797.3	1797.2	1794.7	1792.4	1790.0	1787.7
177.5°	1796.0	1797.9	1799.8	1799.6	1797.2	1794.8	1792.4	1790.1
180°	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3

(END OF REPORT)