

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: P332237-840

Luminaire Tested: **S123DIW-S1165D1535U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332237-840
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-S1165D1535U840-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10273.8 lumens
Efficiency: N/A
Efficacy: 123.9 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

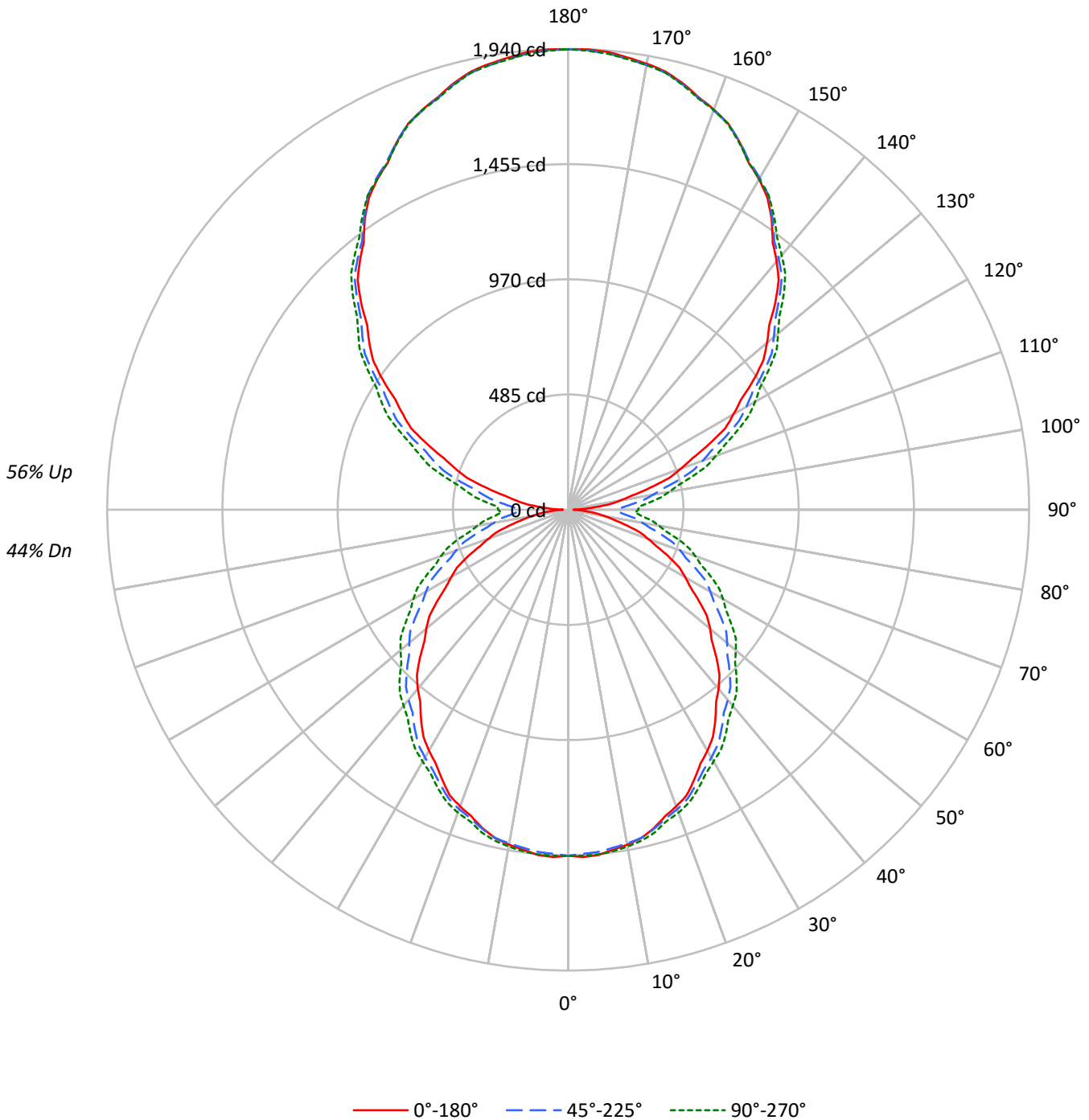
Input Watts (W): 82.9
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	97	97	97	97	80	80	80		64	64	64		50	50	50	44
1	95	91	87	83	87	83	79	76	69	66	64		55	53	52		43	42	41	35
2	87	79	72	67	79	72	66	62	60	55	52		48	45	42		37	35	34	29
3	79	69	61	55	72	63	56	51	52	47	43		42	39	36		33	30	28	24
4	72	61	53	46	65	56	49	43	46	41	37		37	33	30		29	26	24	20
5	66	54	46	40	60	50	42	37	41	36	31		33	29	26		26	23	21	17
6	61	48	40	34	55	44	37	32	37	31	27		30	26	23		24	21	18	15
7	56	43	35	30	51	40	33	28	33	28	24		27	23	20		22	18	16	13
8	52	39	32	26	47	36	29	24	30	25	21		25	21	18		20	17	14	12
9	48	36	28	23	44	33	26	22	28	22	19		23	19	16		18	15	13	11
10	45	33	26	21	41	30	24	19	26	20	17		21	17	14		17	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15685	15685	15685
5°	15735	15290	15299
10°	15593	14937	14863
15°	15393	14539	14387
20°	15105	14082	13865
25°	14751	13556	13315
30°	14388	13084	12757
35°	13980	12583	12311
40°	13592	12128	11834
45°	13161	11692	11453
50°	12735	11259	11034
55°	12267	10818	10657
60°	11808	10368	10270
65°	11339	9889	9809
70°	10633	9352	9336
75°	9740	8736	8855
80°	8709	8132	8306
85°	7760	7716	7988



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.1	1.3
10°-20°	393.8	3.8
20°-30°	589.0	5.7
30°-40°	703.4	6.8
40°-50°	735.9	7.2
50°-60°	690.6	6.7
60°-70°	576.8	5.6
70°-80°	412.7	4.0
80°-90°	251.8	2.5
90°-100°	280.7	2.7
100°-110°	491.5	4.8
110°-120°	718.7	7.0
120°-130°	888.9	8.7
130°-140°	969.9	9.4
140°-150°	938.4	9.1
150°-160°	786.6	7.7
160°-170°	523.6	5.1
170°-180°	183.3	1.8
0°-30°	1120.9	10.9
0°-40°	1824.3	17.8
0°-60°	3250.8	31.6
0°-90°	4492.1	43.7
90°-120°	1490.9	14.5
90°-150°	4288.1	41.7
90°-180°	5782.0	56.3
0°-180°	10273.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1457	1457	1457	1457	1457	
5°	1459	1455	1446	1458	1457	138
15°	1389	1393	1392	1407	1406	391
25°	1254	1269	1275	1294	1295	578
35°	1079	1105	1126	1148	1156	675
45°	883	921	960	990	1003	680
55°	673	726	783	824	838	602
65°	465	528	597	643	660	459
75°	252	327	406	457	478	270
85°	78	157	241	293	311	82
90°	22	116	216	274	295	20
95°	107	181	270	323	341	115
105°	355	399	478	521	540	380
115°	655	680	733	771	784	648
125°	952	959	1000	1026	1032	849
135°	1232	1240	1256	1277	1283	949
145°	1492	1494	1498	1509	1510	931
155°	1707	1707	1709	1714	1704	785
165°	1859	1855	1855	1863	1853	524
175°	1934	1928	1928	1936	1926	184
180°	1938	1938	1938	1938	1938	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2
2.5°	1463.6	1462.8	1461.9	1461.1	1460.2	1458.6	1456.4	1454.1	1451.9	1449.7	1451.9
5°	1458.9	1458.1	1457.4	1456.7	1456.0	1454.6	1452.5	1450.4	1448.2	1446.1	1449.0
7.5°	1444.5	1444.7	1444.8	1445.0	1445.1	1444.2	1442.1	1440.1	1438.0	1435.9	1439.5
10°	1431.9	1432.6	1433.3	1434.0	1434.7	1434.1	1432.4	1430.6	1428.9	1427.0	1430.6
12.5°	1416.6	1417.5	1418.6	1419.6	1420.6	1420.5	1419.3	1418.1	1416.8	1415.6	1418.9
15°	1389.0	1390.1	1391.1	1392.2	1393.2	1393.6	1393.2	1392.9	1392.5	1392.2	1395.7
17.5°	1354.0	1356.1	1358.3	1360.4	1362.5	1363.5	1363.4	1363.2	1363.1	1362.9	1366.1
20°	1328.7	1330.8	1332.9	1335.0	1337.2	1338.6	1339.3	1340.0	1340.7	1341.4	1344.5
22.5°	1302.0	1304.1	1306.3	1308.4	1310.5	1312.0	1313.0	1314.0	1314.9	1316.0	1320.0
25°	1254.1	1257.6	1261.1	1264.7	1268.2	1270.4	1271.5	1272.5	1273.6	1274.7	1279.3
27.5°	1205.8	1209.8	1213.9	1217.9	1221.8	1225.1	1227.3	1229.5	1231.8	1234.1	1238.0
30°	1171.5	1176.1	1180.6	1185.3	1189.8	1193.6	1196.4	1199.2	1202.0	1204.9	1209.1
32.5°	1133.4	1138.5	1143.7	1148.8	1154.0	1158.4	1162.1	1165.8	1169.4	1173.1	1177.6
35°	1079.4	1085.1	1090.8	1096.4	1102.1	1107.1	1111.8	1116.3	1120.8	1125.5	1130.7
37.5°	1022.3	1028.6	1035.0	1041.4	1047.7	1053.7	1059.3	1065.0	1070.7	1076.3	1082.3
40°	984.2	990.6	996.9	1003.2	1009.6	1016.3	1023.4	1030.4	1037.4	1044.5	1050.6
42.5°	942.3	950.1	957.9	965.5	973.3	980.9	988.3	995.5	1002.9	1010.3	1016.8
45°	882.6	891.1	899.5	908.0	916.5	925.1	933.9	942.7	951.6	960.4	967.0
47.5°	820.0	829.6	839.2	848.9	858.5	868.3	878.4	888.5	898.6	908.7	916.1
50°	779.4	789.3	799.2	809.0	818.9	829.3	840.3	851.2	862.1	873.0	881.2
52.5°	736.3	746.7	757.1	767.6	778.0	789.3	801.3	813.3	825.5	837.5	846.0
55°	673.1	684.7	696.3	708.0	719.6	731.7	744.5	757.2	769.9	782.6	792.1
57.5°	611.5	623.6	635.7	647.8	660.0	673.1	686.9	700.8	714.7	728.6	738.2
60°	568.3	581.0	593.7	606.4	619.0	632.7	647.1	661.6	676.1	690.5	700.4
62.5°	527.7	540.7	553.6	566.6	579.6	593.7	609.0	624.3	639.6	655.0	664.8
65°	465.1	478.9	492.6	506.3	520.2	534.8	550.3	565.8	581.4	596.8	607.4
67.5°	401.6	416.3	430.8	445.5	460.0	475.2	491.0	506.9	522.6	538.5	550.0
70°	357.2	372.3	387.5	402.6	417.9	433.9	450.8	467.8	484.7	501.6	512.9
72.5°	316.5	331.7	346.9	362.0	377.2	393.5	411.0	428.5	446.1	463.5	475.1
75°	252.4	269.0	285.6	302.2	318.7	335.8	353.5	371.1	388.7	406.4	418.0
77.5°	196.5	213.3	229.9	246.7	263.4	280.6	298.4	316.2	334.0	351.7	364.1
80°	157.1	174.4	191.8	209.0	226.3	244.1	262.5	280.8	299.1	317.5	329.5
82.5°	122.9	140.5	158.0	175.6	193.1	211.3	229.8	248.5	267.1	285.7	297.7
85°	77.8	95.4	113.1	130.7	148.3	166.5	185.2	203.9	222.6	241.3	253.3
87.5°	42.5	60.8	79.0	97.3	115.5	134.1	152.9	171.8	190.7	209.5	221.8
90°	22.1	42.8	63.5	84.1	104.8	126.3	148.8	171.2	193.5	215.9	229.2
92.5°	56.2	74.1	92.0	109.9	127.7	146.8	167.0	187.2	207.5	227.7	240.4
95°	107.3	123.4	139.6	155.7	171.8	189.9	209.8	229.8	249.8	269.8	282.2
97.5°	175.1	189.3	203.5	217.7	231.9	248.2	266.6	285.1	303.6	322.0	334.2
100°	221.4	234.7	248.0	261.4	274.7	290.2	308.2	326.1	344.1	361.9	373.2
102.5°	275.0	286.3	297.7	309.1	320.4	335.3	353.5	371.6	389.8	408.0	418.9
105°	355.4	364.5	373.7	382.7	391.9	405.6	423.8	442.0	460.2	478.5	488.3
107.5°	447.3	454.8	462.4	470.1	477.7	489.3	504.8	520.5	536.0	551.7	562.2
110°	504.4	511.5	518.5	525.5	532.5	543.4	558.3	573.0	587.8	602.6	613.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	565.3	571.0	576.6	582.2	587.8	597.5	611.2	624.9	638.5	652.3	662.8
115°	655.1	660.4	665.6	670.9	676.1	684.8	696.8	708.8	720.8	732.9	741.6
117.5°	746.8	750.1	753.4	756.7	759.9	767.1	778.2	789.2	800.2	811.3	819.6
120°	802.7	806.6	810.4	814.2	818.0	824.9	834.8	844.8	854.6	864.6	872.4
122.5°	862.5	864.8	867.3	869.7	872.1	878.4	888.6	898.8	909.0	919.2	926.1
125°	952.0	953.0	954.0	955.0	956.0	961.3	970.9	980.4	990.0	999.6	1005.5
127.5°	1036.0	1037.8	1039.7	1041.5	1043.3	1048.0	1055.7	1063.5	1071.2	1078.9	1084.0
130°	1092.1	1094.4	1096.8	1099.1	1101.5	1105.7	1111.8	1117.7	1123.8	1129.8	1135.2
132.5°	1146.8	1149.4	1152.1	1154.8	1157.4	1161.1	1166.1	1170.9	1175.9	1180.7	1185.6
135°	1232.1	1233.8	1235.5	1237.1	1238.8	1241.4	1245.0	1248.5	1252.0	1255.6	1260.6
137.5°	1311.0	1312.4	1313.7	1315.1	1316.6	1318.9	1321.9	1324.9	1328.1	1331.1	1335.2
140°	1364.5	1366.2	1367.9	1369.6	1371.3	1372.8	1374.2	1375.6	1377.1	1378.4	1383.4
142.5°	1414.4	1415.8	1417.2	1418.7	1420.1	1421.2	1422.0	1422.9	1423.7	1424.5	1428.9
145°	1492.5	1492.8	1493.1	1493.4	1493.7	1494.4	1495.4	1496.4	1497.4	1498.4	1501.0
147.5°	1559.0	1560.2	1561.5	1562.8	1564.0	1565.0	1566.0	1566.9	1567.8	1568.8	1569.6
150°	1606.6	1607.3	1607.9	1608.6	1609.3	1609.9	1610.6	1611.3	1611.9	1612.7	1612.7
152.5°	1645.6	1646.5	1647.5	1648.4	1649.3	1650.0	1650.4	1650.8	1651.2	1651.6	1652.2
155°	1707.1	1707.1	1707.1	1707.1	1707.1	1707.3	1707.6	1707.9	1708.3	1708.6	1710.0
157.5°	1759.5	1759.1	1758.7	1758.3	1757.9	1757.8	1758.1	1758.3	1758.6	1758.9	1760.3
160°	1792.4	1791.7	1791.0	1790.3	1789.7	1789.3	1789.3	1789.3	1789.3	1789.3	1791.0
162.5°	1821.6	1820.7	1819.7	1818.8	1817.9	1817.5	1817.8	1818.1	1818.3	1818.6	1820.3
165°	1859.4	1858.4	1857.3	1856.3	1855.3	1854.8	1854.8	1854.8	1854.8	1854.8	1856.8
167.5°	1889.6	1888.1	1886.8	1885.4	1884.1	1883.6	1883.8	1884.1	1884.4	1884.6	1886.7
170°	1906.5	1905.2	1903.9	1902.5	1901.2	1900.5	1900.5	1900.5	1900.5	1900.5	1902.9
172.5°	1920.0	1918.6	1917.2	1915.9	1914.6	1913.9	1913.9	1913.9	1913.9	1913.9	1916.0
175°	1934.0	1932.7	1931.3	1930.0	1928.5	1927.9	1927.9	1927.9	1927.9	1927.9	1930.0
177.5°	1939.7	1938.7	1937.6	1936.5	1935.4	1934.9	1934.9	1934.9	1934.9	1934.9	1936.5
180°	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2
2.5°	1454.1	1456.4	1458.6	1459.7	1459.4	1459.1	1458.8	1458.5
5°	1451.8	1454.6	1457.4	1458.6	1458.3	1457.9	1457.6	1457.2
7.5°	1443.0	1446.5	1450.1	1451.7	1451.2	1450.8	1450.4	1450.0
10°	1434.1	1437.6	1441.2	1442.6	1441.9	1441.2	1440.5	1439.8
12.5°	1422.2	1425.4	1428.7	1429.9	1429.2	1428.5	1427.7	1427.0
15°	1399.2	1402.7	1406.2	1407.9	1407.5	1407.1	1406.8	1406.4
17.5°	1369.3	1372.5	1375.6	1377.0	1376.5	1376.0	1375.5	1375.0
20°	1347.7	1350.9	1354.0	1355.8	1356.1	1356.6	1356.9	1357.3
22.5°	1324.0	1328.1	1332.0	1333.9	1333.7	1333.5	1333.3	1333.1
25°	1283.8	1288.5	1293.0	1295.4	1295.4	1295.4	1295.4	1295.4
27.5°	1241.9	1245.9	1249.8	1251.9	1252.2	1252.5	1252.8	1253.1
30°	1213.4	1217.6	1221.7	1223.9	1223.9	1223.9	1223.9	1223.9
32.5°	1182.1	1186.7	1191.1	1193.9	1194.7	1195.6	1196.4	1197.2
35°	1136.1	1141.3	1146.6	1150.0	1151.4	1152.9	1154.3	1155.6
37.5°	1088.2	1094.3	1100.2	1103.8	1105.0	1106.1	1107.2	1108.3
40°	1056.5	1062.5	1068.5	1072.2	1073.6	1075.0	1076.4	1077.8
42.5°	1023.4	1030.0	1036.5	1040.8	1042.7	1044.7	1046.6	1048.6
45°	973.8	980.5	987.2	992.0	994.8	997.6	1000.5	1003.2
47.5°	923.7	931.3	938.9	943.7	945.8	948.1	950.3	952.4
50°	889.3	897.5	905.5	910.8	913.3	915.7	918.3	920.7
52.5°	854.3	862.7	871.1	876.9	879.9	882.9	886.0	889.0
55°	801.6	811.1	820.7	826.9	829.7	832.5	835.4	838.2
57.5°	747.8	757.4	767.0	773.5	776.8	780.1	783.5	786.7
60°	710.2	720.1	730.0	736.9	740.8	744.7	748.5	752.5
62.5°	674.7	684.6	694.5	701.3	704.8	708.4	712.1	715.6
65°	618.0	628.6	639.2	646.2	649.7	653.3	656.8	660.4
67.5°	561.6	573.2	584.7	592.0	595.0	597.9	600.9	603.9
70°	524.2	535.5	546.7	554.2	557.7	561.3	564.7	568.3
72.5°	486.7	498.3	509.8	517.4	520.9	524.4	528.0	531.5
75°	429.7	441.3	452.9	460.9	465.1	469.4	473.6	477.8
77.5°	376.3	388.6	400.9	408.6	411.9	415.2	418.4	421.6
80°	341.4	353.5	365.5	373.2	376.8	380.3	383.8	387.3
82.5°	309.7	321.7	333.7	341.4	345.0	348.5	352.0	355.6
85°	265.3	277.3	289.2	297.0	300.5	304.1	307.6	311.1
87.5°	234.1	246.3	258.6	266.6	270.2	273.9	277.5	281.2
90°	242.7	256.0	269.3	278.1	282.3	286.5	290.7	294.9
92.5°	253.3	266.1	278.8	286.7	289.5	292.4	295.2	298.0
95°	294.4	306.7	319.0	326.9	330.4	334.0	337.5	341.0
97.5°	346.2	358.3	370.3	378.1	381.4	384.9	388.3	391.6
100°	384.5	395.7	407.0	414.7	418.9	423.0	427.3	431.5
102.5°	429.9	440.8	451.8	459.0	462.3	465.7	469.2	472.5
105°	498.2	508.1	518.0	524.8	528.7	532.5	536.3	540.2
107.5°	572.8	583.3	593.8	600.5	603.2	605.8	608.5	611.3
110°	623.7	634.2	644.7	651.1	653.2	655.3	657.5	659.6



TEST NUMBER: P332237-840

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	673.3	683.8	694.3	701.0	704.0	707.0	709.9	712.9
115°	750.4	759.3	768.1	773.8	776.2	778.7	781.1	783.7
117.5°	828.0	836.3	844.6	849.7	851.4	853.2	855.1	856.9
120°	880.2	888.0	895.8	900.5	902.3	904.1	905.8	907.7
122.5°	933.1	940.1	947.0	951.2	952.8	954.3	955.8	957.4
125°	1011.6	1017.6	1023.7	1027.3	1028.4	1029.6	1030.7	1031.8
127.5°	1089.1	1094.2	1099.2	1102.3	1103.1	1103.9	1104.8	1105.6
130°	1140.5	1145.9	1151.2	1153.8	1153.6	1153.3	1153.1	1152.8
132.5°	1190.3	1195.2	1199.9	1202.6	1203.2	1203.8	1204.4	1204.9
135°	1265.6	1270.6	1275.6	1278.6	1279.7	1280.8	1281.8	1282.9
137.5°	1339.4	1343.5	1347.8	1350.0	1350.5	1351.0	1351.5	1351.9
140°	1388.4	1393.3	1398.3	1400.4	1399.8	1399.2	1398.6	1398.0
142.5°	1433.3	1437.6	1442.1	1444.2	1444.1	1444.1	1444.0	1444.0
145°	1503.4	1505.9	1508.4	1509.6	1509.7	1509.7	1509.8	1509.8
147.5°	1570.5	1571.3	1572.2	1572.3	1571.5	1570.7	1569.9	1569.2
150°	1612.7	1612.7	1612.7	1612.0	1610.6	1609.3	1608.0	1606.7
152.5°	1652.7	1653.3	1653.9	1653.3	1651.6	1650.0	1648.4	1646.8
155°	1711.3	1712.6	1714.0	1713.5	1711.1	1708.8	1706.4	1704.0
157.5°	1761.7	1763.1	1764.5	1764.3	1762.4	1760.5	1758.6	1756.8
160°	1792.7	1794.4	1796.0	1796.2	1794.9	1793.5	1792.2	1790.8
162.5°	1821.9	1823.6	1825.3	1825.1	1822.9	1820.8	1818.6	1816.4
165°	1858.9	1860.9	1862.9	1862.8	1860.4	1858.1	1855.6	1853.3
167.5°	1888.9	1891.0	1893.0	1893.0	1891.0	1888.9	1886.7	1884.6
170°	1905.2	1907.6	1910.0	1910.0	1907.6	1905.2	1902.9	1900.5
172.5°	1918.0	1920.2	1922.3	1922.2	1919.8	1917.4	1915.0	1912.7
175°	1932.0	1934.0	1936.0	1935.8	1933.5	1931.1	1928.7	1926.4
177.5°	1938.1	1939.7	1941.4	1941.3	1939.3	1937.4	1935.6	1933.7
180°	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5	1938.5

(END OF REPORT)