

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: P332982

Luminaire Tested: **S124RDIP-S1020D1205U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332982
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: S124RDIP-S1020D1205U835-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1205 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8981.9 lumens
Efficiency: N/A
Efficacy: 137.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

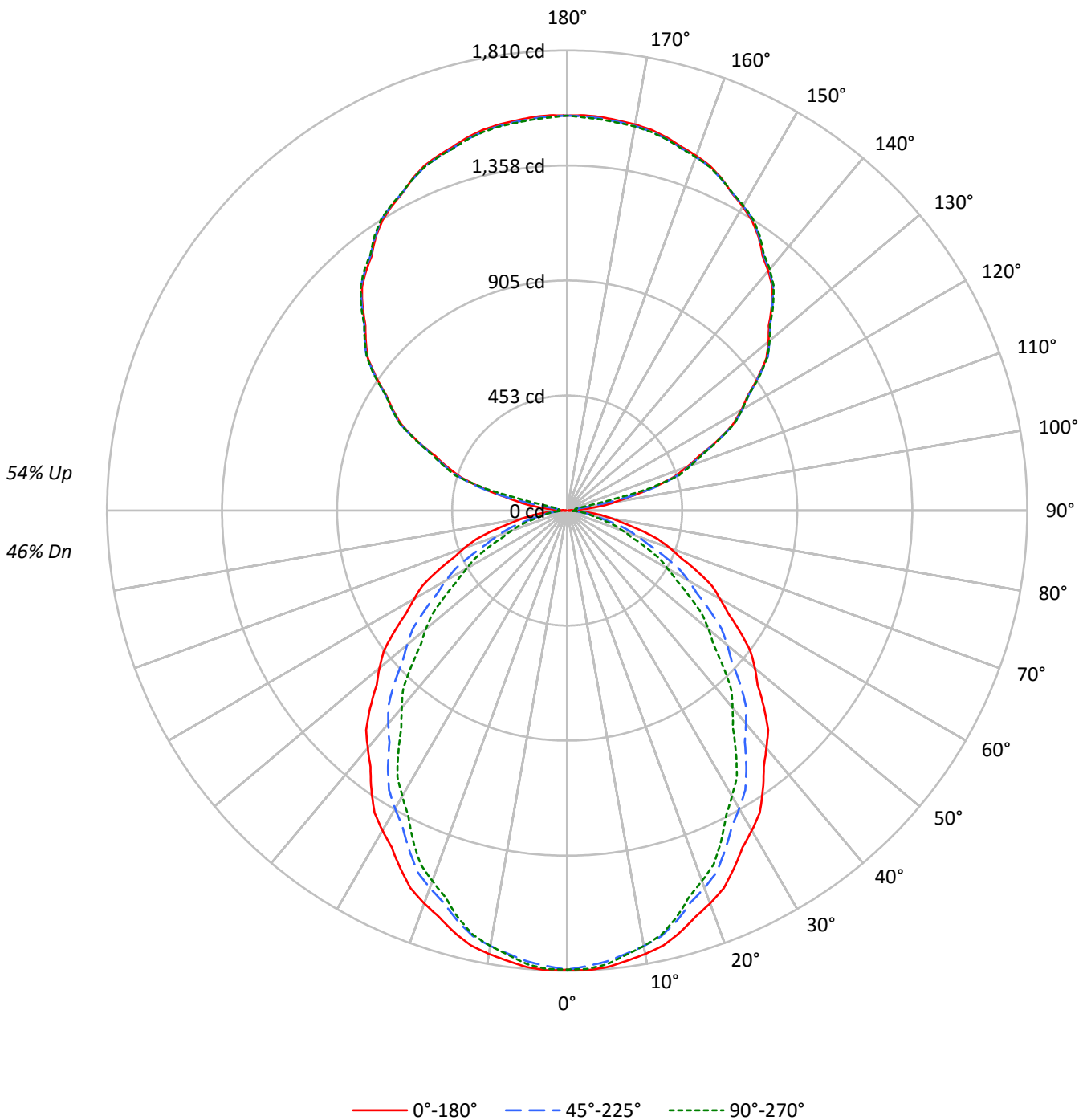
Input Watts (W): 65.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20										
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	50	30	10	0														
RCR																																						
0	106	106	106	106	98	98	98	98	81	81	81	67	67	67	53	53	53	46																				
1	97	93	89	86	89	86	82	79	72	69	67	59	57	56	47	46	45	40																				
2	89	82	76	71	81	75	70	66	63	59	56	52	49	47	42	40	38	34																				
3	81	72	65	59	74	66	60	55	56	51	47	46	43	40	37	35	33	29																				
4	74	64	56	50	68	59	52	47	50	45	41	41	38	34	33	31	29	25																				
5	68	57	49	43	62	53	46	40	45	39	35	37	33	30	30	27	25	22																				
6	63	51	43	37	58	47	40	35	40	35	31	34	30	26	27	24	22	19																				
7	58	46	38	33	53	43	36	31	37	31	27	31	26	23	25	22	20	17																				
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	23	20	18	15																				
9	50	38	31	26	46	36	29	24	31	25	22	26	22	19	21	18	16	14																				
10	47	35	28	23	43	33	26	22	28	23	20	24	20	17	20	17	15	13																				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14577	14577	14577
5°	14610	14431	14521
10°	14519	14258	14258
15°	14352	13959	13855
20°	14123	13564	13315
25°	13831	13104	12772
30°	13546	12618	12089
35°	13231	12113	11404
40°	12852	11540	10666
45°	12501	10970	9913
50°	12103	10315	9117
55°	11676	9633	8251
60°	11207	8885	7367
65°	10776	7950	6497
70°	10150	6918	5516
75°	9357	5736	4485
80°	8164	4370	4114
85°	6919	3974	3714



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	169.6	1.9
10°-20°	473.0	5.3
20°-30°	683.0	7.6
30°-40°	774.2	8.6
40°-50°	747.6	8.3
50°-60°	621.7	6.9
60°-70°	429.3	4.8
70°-80°	217.6	2.4
80°-90°	60.3	0.7
90°-100°	53.1	0.6
100°-110°	338.8	3.8
110°-120°	648.1	7.2
120°-130°	822.7	9.2
130°-140°	880.2	9.8
140°-150°	823.1	9.2
150°-160°	663.8	7.4
160°-170°	428.1	4.8
170°-180°	147.6	1.6
0°-30°	1325.6	14.8
0°-40°	2099.9	23.4
0°-60°	3469.2	38.6
0°-90°	4176.4	46.5
90°-120°	1040.0	11.6
90°-150°	3566.1	39.7
90°-180°	4806.0	53.5
0°-180°	8981.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1806	1806	1806	1806	1806	
5°	1803	1797	1781	1794	1792	171
15°	1717	1704	1670	1667	1658	484
25°	1553	1526	1471	1448	1434	715
35°	1342	1297	1229	1183	1157	839
45°	1095	1042	961	896	868	844
55°	830	772	684	615	586	742
65°	564	503	416	359	340	557
75°	300	248	184	153	144	317
85°	75	48	43	40	40	84
90°	4	16	26	32	35	7
95°	64	27	26	32	34	82
105°	350	357	362	370	331	366
115°	653	656	655	658	658	642
125°	918	922	920	924	925	819
135°	1139	1138	1142	1145	1147	877
145°	1313	1316	1316	1318	1320	820
155°	1440	1441	1437	1442	1438	663
165°	1519	1513	1513	1521	1512	429
175°	1554	1547	1548	1557	1544	148
180°	1554	1554	1554	1554	1554	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7
2.5°	1810.1	1809.1	1808.1	1807.2	1806.2	1804.3	1801.6	1798.9	1796.2	1793.5	1796.2
5°	1802.9	1801.7	1800.5	1799.2	1798.0	1795.5	1791.9	1788.2	1784.5	1780.8	1783.9
7.5°	1786.6	1785.3	1784.0	1782.7	1781.4	1778.4	1773.6	1768.8	1764.0	1759.2	1761.2
10°	1771.1	1769.6	1768.0	1766.5	1765.0	1761.4	1755.9	1750.4	1744.8	1739.3	1740.5
12.5°	1751.2	1749.4	1747.6	1745.9	1744.1	1739.9	1733.4	1726.9	1720.4	1713.9	1714.6
15°	1717.2	1714.4	1711.7	1708.9	1706.1	1700.9	1693.2	1685.5	1677.9	1670.2	1669.6
17.5°	1676.0	1672.0	1668.0	1664.0	1660.0	1653.4	1644.2	1635.0	1625.8	1616.5	1614.8
20°	1643.9	1639.9	1635.9	1631.9	1627.9	1620.7	1610.3	1599.8	1589.4	1578.9	1576.5
22.5°	1608.5	1604.0	1599.5	1595.1	1590.6	1582.7	1571.6	1560.4	1549.2	1538.0	1534.3
25°	1552.7	1547.1	1541.6	1536.1	1530.5	1521.5	1508.9	1496.3	1483.7	1471.1	1465.9
27.5°	1494.0	1487.1	1480.2	1473.2	1466.3	1456.1	1442.6	1429.2	1415.7	1402.2	1395.8
30°	1453.1	1445.4	1437.8	1430.1	1422.4	1411.3	1396.9	1382.4	1368.0	1353.6	1345.9
32.5°	1410.0	1401.3	1392.6	1384.0	1375.3	1363.5	1348.6	1333.7	1318.7	1303.8	1294.9
35°	1342.5	1332.7	1322.8	1313.0	1303.2	1290.6	1275.2	1259.9	1244.5	1229.1	1218.7
37.5°	1270.3	1260.2	1250.1	1239.9	1229.8	1216.2	1199.2	1182.2	1165.1	1148.1	1136.4
40°	1219.5	1209.3	1199.2	1189.0	1178.9	1165.1	1147.6	1130.0	1112.5	1095.0	1082.1
42.5°	1170.8	1160.2	1149.5	1138.9	1128.3	1113.8	1095.6	1077.3	1059.1	1040.8	1027.7
45°	1095.0	1083.7	1072.3	1060.9	1049.5	1034.6	1016.2	997.8	979.3	960.9	945.9
47.5°	1016.8	1005.0	993.3	981.6	969.8	954.4	935.2	916.0	896.8	877.7	862.1
50°	963.7	951.7	939.7	927.7	915.7	899.9	880.3	860.6	840.9	821.3	805.9
52.5°	909.5	897.7	886.0	874.3	862.5	846.6	826.4	806.3	786.1	766.0	750.4
55°	829.6	817.3	805.0	792.7	780.4	764.3	744.3	724.3	704.4	684.4	668.4
57.5°	750.5	737.7	724.9	712.1	699.4	683.1	663.5	643.8	624.1	604.5	588.3
60°	694.1	681.8	669.5	657.2	644.9	628.9	609.3	589.6	569.9	550.3	534.3
62.5°	643.2	630.4	617.6	604.8	592.1	575.6	555.4	535.3	515.1	495.0	480.2
65°	564.1	550.9	537.7	524.5	511.3	494.8	475.2	455.5	435.8	416.2	403.0
67.5°	482.0	469.3	456.7	444.0	431.3	415.9	397.6	379.4	361.1	342.9	331.5
70°	430.0	417.1	404.2	391.3	378.4	363.2	345.7	328.1	310.6	293.1	283.0
72.5°	374.7	363.0	351.3	339.7	328.0	313.9	297.4	280.8	264.3	247.8	239.1
75°	300.0	288.7	277.3	265.9	254.6	241.6	227.2	212.8	198.3	183.9	176.8
77.5°	224.3	214.6	205.0	195.3	185.7	175.0	163.3	151.7	140.0	128.3	124.2
80°	175.6	166.7	157.8	148.9	140.0	130.9	121.7	112.5	103.2	94.0	93.1
82.5°	133.6	125.4	117.2	109.0	100.9	94.1	88.9	83.6	78.3	73.0	72.3
85°	74.7	68.5	62.4	56.2	50.1	46.5	45.6	44.7	43.8	42.9	42.2
87.5°	26.1	24.7	23.3	21.9	20.5	19.9	20.1	20.3	20.4	20.6	20.7
90°	3.5	6.3	9.2	12.0	14.8	17.3	19.4	21.4	23.5	25.6	27.1
92.5°	14.6	14.8	15.0	15.1	15.3	16.4	18.4	20.5	22.6	24.6	26.2
95°	63.9	55.1	46.3	37.6	28.8	24.5	24.8	25.0	25.3	25.6	27.1
97.5°	135.7	141.2	146.7	152.1	157.6	145.9	117.1	88.3	59.5	30.7	30.8
100°	190.6	195.2	199.9	204.5	209.2	193.7	158.0	122.4	86.8	51.1	46.7
102.5°	251.9	255.3	258.7	262.1	265.5	264.9	260.3	255.6	251.0	246.3	199.0
105°	349.7	351.3	352.8	354.4	355.9	357.4	358.7	359.9	361.2	362.5	364.9
107.5°	440.6	441.4	442.2	442.9	443.7	445.0	446.7	448.5	450.2	452.0	453.1
110°	502.0	502.7	503.5	504.3	505.1	506.2	507.8	509.3	510.9	512.4	512.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	561.5	562.9	564.2	565.6	567.0	568.1	568.8	569.5	570.3	571.0	570.9
115°	653.0	653.8	654.6	655.3	656.1	656.4	656.1	655.9	655.6	655.3	655.9
117.5°	735.5	736.5	737.6	738.6	739.6	740.4	741.0	741.6	742.2	742.7	742.6
120°	791.3	792.3	793.4	794.4	795.4	795.8	795.6	795.3	795.0	794.8	795.3
122.5°	843.3	844.0	844.6	845.2	845.8	846.3	846.7	847.0	847.4	847.8	848.1
125°	917.9	919.0	920.0	921.0	922.1	922.3	921.8	921.3	920.8	920.3	921.0
127.5°	988.6	988.8	989.1	989.4	989.6	990.3	991.5	992.7	993.9	995.1	994.9
130°	1034.1	1034.4	1034.7	1034.9	1035.2	1035.7	1036.5	1037.2	1038.0	1038.8	1039.0
132.5°	1076.0	1076.4	1076.9	1077.4	1077.8	1078.6	1079.5	1080.5	1081.5	1082.5	1082.7
135°	1138.7	1138.5	1138.2	1137.9	1137.7	1138.1	1139.1	1140.1	1141.2	1142.2	1142.7
137.5°	1194.3	1194.4	1194.5	1194.6	1194.7	1195.3	1196.4	1197.6	1198.7	1199.8	1200.4
140°	1230.5	1231.0	1231.5	1232.1	1232.6	1233.1	1233.6	1234.1	1234.6	1235.2	1235.9
142.5°	1263.0	1264.0	1264.9	1265.8	1266.8	1267.4	1267.7	1268.0	1268.3	1268.6	1269.2
145°	1313.0	1313.8	1314.6	1315.3	1316.1	1316.5	1316.5	1316.5	1316.5	1316.5	1316.8
147.5°	1352.7	1354.2	1355.6	1357.1	1358.5	1359.1	1358.9	1358.6	1358.3	1358.1	1358.3
150°	1381.6	1382.6	1383.6	1384.7	1385.7	1386.1	1385.8	1385.6	1385.3	1385.0	1385.0
152.5°	1405.7	1406.6	1407.4	1408.2	1409.0	1409.2	1408.8	1408.3	1407.8	1407.4	1407.8
155°	1439.7	1439.9	1440.2	1440.4	1440.7	1440.4	1439.7	1438.9	1438.1	1437.3	1438.4
157.5°	1468.2	1468.1	1467.9	1467.8	1467.6	1467.1	1466.2	1465.4	1464.5	1463.6	1464.9
160°	1485.0	1484.2	1483.4	1482.7	1481.9	1481.4	1481.1	1480.8	1480.6	1480.3	1481.9
162.5°	1499.8	1498.9	1497.9	1496.9	1495.9	1495.3	1495.0	1494.8	1494.5	1494.3	1495.8
165°	1518.7	1517.4	1516.1	1514.8	1513.5	1512.9	1512.9	1512.9	1512.9	1512.9	1514.9
167.5°	1533.5	1532.2	1530.9	1529.5	1528.2	1527.4	1527.3	1527.1	1527.0	1526.8	1529.1
170°	1541.9	1540.4	1538.8	1537.3	1535.7	1535.1	1535.3	1535.6	1535.8	1536.1	1538.2
172.5°	1547.5	1545.9	1544.4	1542.8	1541.3	1540.6	1540.9	1541.2	1541.4	1541.7	1543.7
175°	1553.5	1552.0	1550.4	1548.9	1547.3	1546.7	1546.9	1547.2	1547.5	1547.7	1550.0
177.5°	1556.3	1554.9	1553.4	1552.0	1550.5	1550.0	1550.4	1550.8	1551.3	1551.7	1553.3
180°	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7	1805.7
2.5°	1798.9	1801.6	1804.3	1805.6	1805.3	1805.1	1804.8	1804.6
5°	1786.9	1790.0	1793.1	1794.3	1793.7	1793.1	1792.5	1791.9
7.5°	1763.2	1765.1	1767.1	1767.6	1766.6	1765.6	1764.6	1763.6
10°	1741.8	1743.0	1744.2	1744.2	1743.0	1741.8	1740.5	1739.3
12.5°	1715.3	1716.1	1716.8	1716.3	1714.6	1712.9	1711.2	1709.5
15°	1669.0	1668.3	1667.7	1666.3	1664.2	1662.0	1659.9	1657.7
17.5°	1613.1	1611.4	1609.7	1607.2	1603.9	1600.7	1597.4	1594.1
20°	1574.0	1571.6	1569.1	1565.9	1561.9	1557.9	1553.9	1549.9
22.5°	1530.6	1526.9	1523.3	1519.8	1516.5	1513.3	1510.0	1506.8
25°	1460.6	1455.4	1450.2	1446.0	1443.0	1439.9	1436.8	1433.8
27.5°	1389.3	1382.9	1376.4	1371.0	1366.6	1362.1	1357.7	1353.3
30°	1338.2	1330.5	1322.8	1316.5	1311.6	1306.7	1301.8	1296.9
32.5°	1286.0	1277.1	1268.2	1261.4	1256.7	1252.0	1247.4	1242.7
35°	1208.2	1197.8	1187.3	1179.4	1173.8	1168.3	1162.8	1157.2
37.5°	1124.8	1113.1	1101.4	1092.8	1087.3	1081.7	1076.2	1070.7
40°	1069.2	1056.3	1043.4	1034.2	1028.7	1023.1	1017.6	1012.1
42.5°	1014.5	1001.4	988.2	978.8	973.0	967.2	961.4	955.7
45°	930.8	915.7	900.7	890.4	884.9	879.3	873.8	868.3
47.5°	846.5	830.9	815.2	804.4	798.3	792.2	786.1	780.1
50°	790.5	775.2	759.8	749.2	743.4	737.5	731.7	725.9
52.5°	734.7	719.1	703.5	692.7	686.6	680.5	674.4	668.4
55°	652.4	636.5	620.5	609.6	603.7	597.9	592.1	586.2
57.5°	572.0	555.8	539.6	529.3	524.8	520.4	516.0	511.6
60°	518.3	502.3	486.4	475.9	471.0	466.1	461.2	456.3
62.5°	465.5	450.7	436.0	426.6	422.7	418.8	414.8	410.9
65°	389.7	376.5	363.3	354.9	351.2	347.5	343.8	340.1
67.5°	320.1	308.8	297.4	289.7	285.6	281.6	277.5	273.5
70°	272.8	262.7	252.6	245.9	242.9	239.8	236.7	233.7
72.5°	230.4	221.8	213.1	207.4	204.5	201.7	198.9	196.1
75°	169.8	162.7	155.6	151.2	149.3	147.5	145.6	143.8
77.5°	120.1	116.0	111.8	109.5	108.9	108.4	107.8	107.3
80°	92.2	91.3	90.3	89.7	89.4	89.1	88.8	88.5
82.5°	71.6	71.0	70.3	69.8	69.5	69.2	68.9	68.6
85°	41.6	41.0	40.4	40.1	40.1	40.1	40.1	40.1
87.5°	20.7	20.8	20.9	21.1	21.4	21.8	22.1	22.5
90°	28.7	30.2	31.8	32.8	33.3	33.8	34.3	34.9
92.5°	27.7	29.3	30.8	31.7	31.8	31.9	32.0	32.1
95°	28.7	30.2	31.8	32.7	32.9	33.2	33.4	33.7
97.5°	31.0	31.1	31.3	31.5	31.8	32.0	32.3	32.5
100°	42.3	38.0	33.6	31.5	31.8	32.0	32.3	32.5
102.5°	151.6	104.3	56.9	33.3	33.3	33.4	33.4	33.5
105°	367.2	369.5	371.8	368.3	359.0	349.7	340.5	331.2
107.5°	454.3	455.4	456.5	457.6	458.6	459.6	460.5	461.5
110°	513.5	514.0	514.5	515.1	515.9	516.7	517.5	518.2



TEST NUMBER: P332982

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	570.8	570.7	570.6	571.0	572.0	573.0	574.0	574.9
115°	656.4	656.9	657.4	657.7	657.7	657.7	657.7	657.7
117.5°	742.5	742.4	742.3	742.2	742.1	742.0	741.9	741.8
120°	795.8	796.3	796.8	796.8	796.3	795.8	795.3	794.8
122.5°	848.4	848.7	849.0	848.9	848.4	847.9	847.3	846.8
125°	921.8	922.6	923.4	923.9	924.1	924.4	924.7	924.9
127.5°	994.8	994.6	994.5	994.3	994.1	993.9	993.7	993.5
130°	1039.3	1039.6	1039.8	1039.9	1039.9	1039.9	1039.9	1039.9
132.5°	1083.0	1083.3	1083.5	1083.5	1083.3	1083.1	1082.9	1082.7
135°	1143.2	1143.7	1144.3	1144.8	1145.3	1145.8	1146.3	1146.8
137.5°	1201.0	1201.5	1202.1	1202.3	1202.2	1202.0	1201.8	1201.7
140°	1236.7	1237.5	1238.3	1238.8	1239.0	1239.3	1239.5	1239.8
142.5°	1269.8	1270.3	1270.9	1271.2	1271.3	1271.3	1271.4	1271.4
145°	1317.0	1317.3	1317.5	1317.9	1318.4	1318.9	1319.5	1320.0
147.5°	1358.5	1358.7	1358.9	1359.1	1359.4	1359.7	1359.9	1360.2
150°	1385.0	1385.0	1385.0	1385.2	1385.4	1385.7	1386.0	1386.2
152.5°	1408.2	1408.6	1409.0	1409.1	1409.0	1408.8	1408.7	1408.5
155°	1439.4	1440.4	1441.5	1441.6	1440.8	1440.0	1439.3	1438.5
157.5°	1466.3	1467.6	1469.0	1469.0	1467.6	1466.3	1464.9	1463.6
160°	1483.4	1485.0	1486.5	1486.5	1485.0	1483.4	1481.9	1480.3
162.5°	1497.4	1498.9	1500.5	1500.4	1498.6	1496.9	1495.1	1493.3
165°	1517.0	1519.1	1521.1	1521.0	1518.7	1516.3	1514.0	1511.7
167.5°	1531.4	1533.6	1535.9	1535.7	1533.2	1530.6	1528.0	1525.4
170°	1540.2	1542.3	1544.4	1544.1	1541.5	1538.9	1536.4	1533.8
172.5°	1545.8	1547.9	1549.9	1549.6	1546.8	1544.0	1541.2	1538.4
175°	1552.4	1554.7	1557.0	1556.6	1553.5	1550.4	1547.3	1544.2
177.5°	1555.0	1556.6	1558.3	1557.9	1555.4	1552.9	1550.4	1548.0
180°	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5	1553.5

(END OF REPORT)