

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: P332220

Luminaire Tested: **S123DIW-S1165D755U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332220
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-S1165D755U835-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 755 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7780.2 lumens
Efficiency: N/A
Efficacy: 130.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Direct

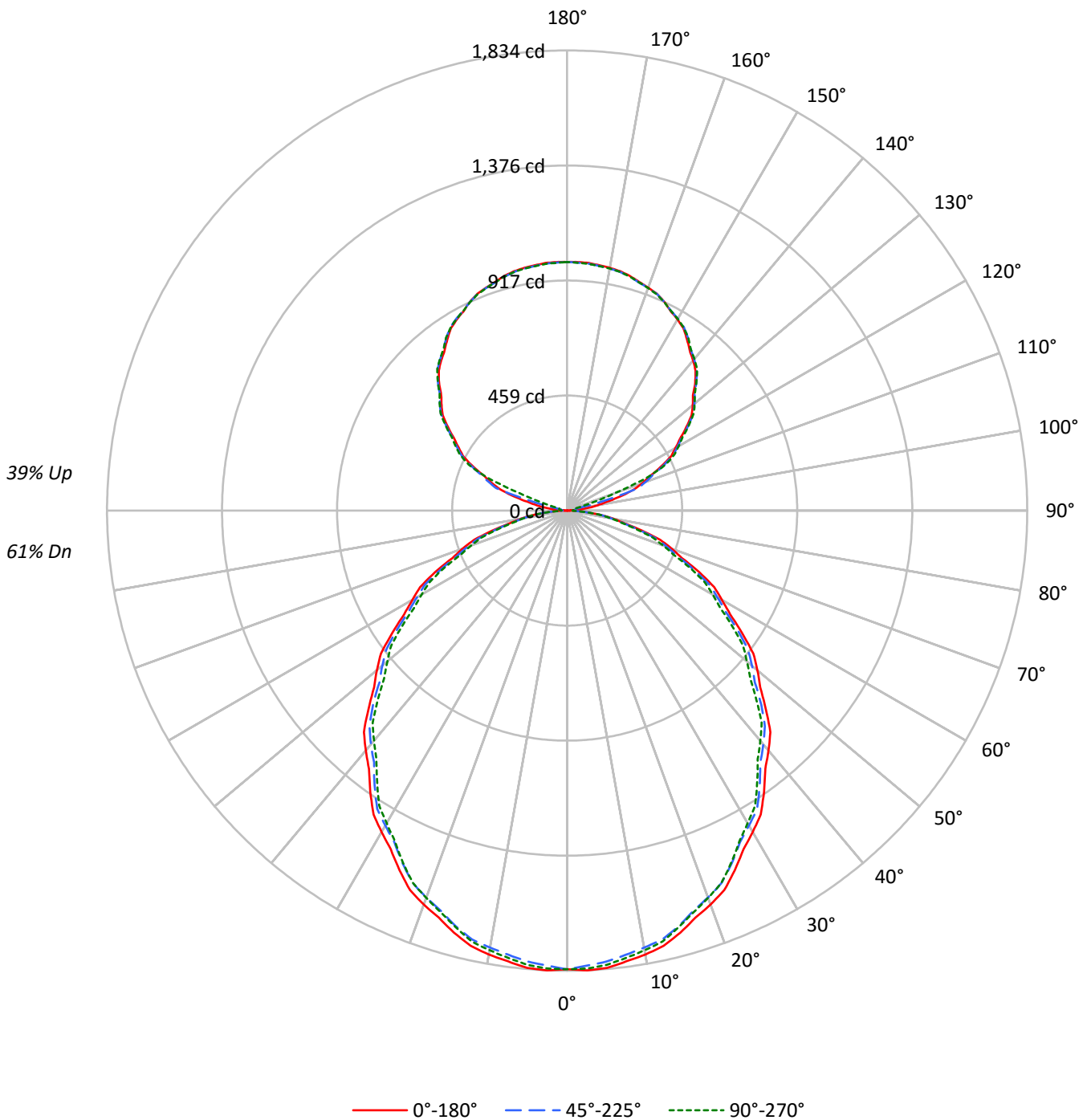
Input Watts (W): 59.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	110	110	110	103	103	103	103	90	90	90	77	77	77	66	66	66	61
1	100	96	92	88	94	90	86	83	78	76	73	68	66	64	59	57	56	51
2	91	84	77	72	85	78	73	68	69	64	61	60	57	54	52	49	47	43
3	83	73	66	60	78	69	62	57	61	55	51	53	49	45	46	43	40	36
4	76	65	57	51	71	61	54	48	54	48	44	47	43	39	41	37	34	31
5	70	58	50	44	65	55	47	42	48	42	38	42	38	34	37	33	30	27
6	64	52	44	38	60	49	42	36	44	37	33	38	33	30	33	29	26	24
7	60	47	39	33	56	44	37	32	39	33	29	35	30	26	30	27	24	21
8	55	43	35	29	52	41	33	28	36	30	26	32	27	23	28	24	21	19
9	52	39	32	26	48	37	30	25	33	27	23	29	25	21	26	22	19	17
10	48	36	29	24	45	34	27	23	31	25	21	27	22	19	24	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	19678	19678	19678
5°	19770	19498	19634
10°	19638	19329	19449
15°	19409	19110	19146
20°	19140	18798	18816
25°	18781	18427	18389
30°	18385	18013	17877
35°	17971	17578	17350
40°	17537	17096	16831
45°	17061	16653	16247
50°	16583	16109	15662
55°	15959	15546	15073
60°	15330	14889	14415
65°	14772	14174	13733
70°	13951	13357	12765
75°	12747	12289	11765
80°	11499	11009	10916
85°	10090	9707	9324



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.2	2.2
10°-20°	486.2	6.2
20°-30°	718.3	9.2
30°-40°	839.0	10.8
40°-50°	843.5	10.8
50°-60°	740.9	9.5
60°-70°	552.0	7.1
70°-80°	314.5	4.0
80°-90°	93.0	1.2
90°-100°	36.0	0.5
100°-110°	171.6	2.2
110°-120°	412.3	5.3
120°-130°	525.0	6.7
130°-140°	560.9	7.2
140°-150°	524.5	6.7
150°-160°	423.1	5.4
160°-170°	273.1	3.5
170°-180°	94.1	1.2
0°-30°	1376.7	17.7
0°-40°	2215.7	28.5
0°-60°	3800.2	48.8
0°-90°	4759.7	61.2
90°-120°	619.9	8.0
90°-150°	2230.2	28.7
90°-180°	3020.0	38.8
0°-180°	7780.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1828	1828	1828	1828	1828	
5°	1830	1821	1804	1819	1817	173
15°	1742	1735	1715	1726	1718	491
25°	1581	1571	1552	1553	1548	728
35°	1368	1358	1338	1328	1320	855
45°	1121	1114	1094	1076	1067	865
55°	850	848	828	812	803	761
65°	580	572	556	544	539	572
75°	306	300	296	288	283	328
85°	82	79	79	76	76	90
90°	1	8	18	21	22	7
95°	45	17	23	28	28	55
105°	219	223	161	38	32	232
115°	411	416	422	430	433	406
125°	580	586	589	590	592	518
135°	722	726	729	731	729	555
145°	833	838	840	841	841	521
155°	918	916	917	920	916	423
165°	968	966	965	970	965	273
175°	990	987	988	992	987	94
180°	990	990	990	990	990	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1828.1	1828.1	1828.1	1828.1	1828.1	1828.1	1828.1	1828.1	1828.1	1828.1	1828.1
2.5°	1834.4	1833.3	1832.2	1831.1	1829.9	1827.8	1824.8	1821.7	1818.6	1815.5	1818.3
5°	1829.7	1828.0	1826.2	1824.5	1822.7	1819.9	1816.1	1812.2	1808.4	1804.5	1808.0
7.5°	1811.8	1810.0	1808.3	1806.5	1804.8	1801.9	1797.9	1794.0	1790.0	1786.0	1789.1
10°	1796.7	1794.9	1793.2	1791.4	1789.7	1786.6	1782.0	1777.5	1772.9	1768.4	1771.5
12.5°	1776.6	1775.1	1773.6	1772.2	1770.7	1767.8	1763.6	1759.3	1755.0	1750.8	1753.1
15°	1741.7	1740.3	1738.9	1737.5	1736.1	1733.1	1728.6	1724.0	1719.5	1714.9	1717.7
17.5°	1701.1	1699.3	1697.5	1695.7	1693.8	1690.7	1686.1	1681.6	1677.0	1672.5	1674.5
20°	1670.9	1668.8	1666.7	1664.6	1662.6	1659.2	1654.7	1650.2	1645.6	1641.1	1642.5
22.5°	1637.0	1634.9	1632.8	1630.7	1628.6	1625.3	1620.7	1616.2	1611.7	1607.1	1608.2
25°	1581.3	1579.2	1577.1	1575.0	1573.0	1569.6	1565.1	1560.6	1556.0	1551.5	1551.8
27.5°	1521.9	1519.9	1517.9	1515.8	1513.8	1510.4	1505.5	1500.6	1495.7	1490.8	1491.1
30°	1479.2	1477.4	1475.7	1473.9	1472.2	1468.9	1464.0	1459.1	1454.2	1449.3	1449.3
32.5°	1436.4	1434.1	1431.8	1429.5	1427.2	1424.1	1420.4	1416.6	1412.8	1409.1	1407.1
35°	1367.6	1365.5	1363.4	1361.3	1359.2	1355.9	1351.3	1346.8	1342.2	1337.7	1335.6
37.5°	1297.1	1294.5	1291.8	1289.2	1286.5	1282.9	1278.3	1273.7	1269.1	1264.4	1261.9
40°	1248.1	1246.0	1243.9	1241.8	1239.7	1236.2	1231.3	1226.4	1221.5	1216.7	1213.9
42.5°	1199.0	1196.7	1194.3	1191.9	1189.5	1185.9	1181.0	1176.1	1171.2	1166.4	1163.6
45°	1120.8	1119.4	1118.0	1116.6	1115.2	1112.2	1107.7	1103.1	1098.6	1094.0	1089.9
47.5°	1043.1	1041.1	1039.1	1037.0	1035.0	1031.9	1027.6	1023.3	1019.1	1014.8	1010.7
50°	990.3	988.6	986.8	985.1	983.3	980.2	975.6	971.1	966.5	962.0	958.2
52.5°	935.0	933.8	932.6	931.4	930.2	927.2	922.4	917.6	912.8	907.9	904.6
55°	850.4	850.1	849.7	849.4	849.0	846.6	842.0	837.5	832.9	828.4	824.6
57.5°	769.9	768.7	767.5	766.4	765.2	762.8	759.1	755.5	751.9	748.2	744.8
60°	712.1	711.7	711.4	711.0	710.7	708.4	704.2	700.0	695.8	691.6	688.5
62.5°	660.5	659.6	658.7	657.8	656.9	654.3	650.1	645.9	641.8	637.6	634.4
65°	580.0	578.3	576.5	574.8	573.0	570.4	566.9	563.4	559.9	556.5	553.7
67.5°	494.8	493.3	491.8	490.2	488.7	486.6	483.9	481.3	478.6	476.0	473.5
70°	443.3	441.2	439.1	437.0	434.9	432.8	430.7	428.6	426.5	424.4	422.0
72.5°	389.2	387.7	386.1	384.6	383.1	381.1	378.7	376.3	374.0	371.6	369.4
75°	306.5	305.1	303.7	302.3	300.9	299.7	298.7	297.6	296.6	295.5	293.8
77.5°	233.3	232.5	231.7	231.0	230.2	229.2	227.9	226.7	225.4	224.2	223.0
80°	185.5	184.4	183.4	182.3	181.3	180.4	179.7	179.0	178.3	177.6	177.3
82.5°	139.0	138.7	138.5	138.3	138.1	137.9	137.8	137.7	137.5	137.4	136.8
85°	81.7	81.0	80.3	79.6	78.9	78.6	78.6	78.6	78.6	78.6	77.9
87.5°	32.8	32.3	31.8	31.3	30.8	30.6	30.8	30.9	31.1	31.2	31.0
90°	0.7	2.4	4.0	5.6	7.3	9.2	11.3	13.4	15.5	17.7	18.3
92.5°	13.7	13.2	12.8	12.3	11.9	12.4	14.0	15.6	17.2	18.8	19.9
95°	44.9	38.2	31.5	24.8	18.1	15.6	17.4	19.2	21.0	22.8	24.0
97.5°	90.2	87.2	84.2	81.2	78.2	70.8	59.0	47.2	35.5	23.7	25.0
100°	124.4	127.6	130.9	134.2	137.4	126.3	100.8	75.3	49.8	24.3	25.6
102.5°	163.2	165.6	167.9	170.3	172.6	159.9	132.0	104.1	76.3	48.4	44.4
105°	219.3	221.1	222.9	224.7	226.5	220.0	205.3	190.6	175.9	161.2	132.2
107.5°	278.4	279.9	281.3	282.8	284.2	286.1	288.4	290.7	293.1	295.4	274.1
110°	317.9	319.2	320.5	321.8	323.1	324.7	326.5	328.3	330.1	331.9	326.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	355.6	356.7	357.9	359.1	360.3	361.8	363.6	365.4	367.2	369.0	369.1
115°	411.3	412.3	413.3	414.3	415.3	416.5	418.0	419.4	420.9	422.4	424.0
117.5°	465.4	466.6	467.8	469.0	470.2	471.2	471.9	472.7	473.4	474.2	475.5
120°	498.9	500.4	501.9	503.3	504.8	505.8	506.3	506.8	507.3	507.7	509.1
122.5°	533.1	534.3	535.5	536.7	537.9	538.8	539.4	540.1	540.7	541.3	542.2
125°	579.9	581.2	582.5	583.8	585.1	586.1	586.7	587.4	588.0	588.7	589.0
127.5°	625.2	626.5	627.8	629.1	630.4	631.5	632.3	633.0	633.8	634.6	635.1
130°	653.4	654.8	656.1	657.4	658.7	659.7	660.3	661.0	661.6	662.3	662.9
132.5°	680.5	681.8	683.1	684.4	685.8	686.7	687.2	687.7	688.2	688.8	689.4
135°	721.9	722.9	723.8	724.8	725.8	726.6	727.3	727.9	728.6	729.2	729.7
137.5°	757.2	758.4	759.7	760.9	762.2	763.0	763.3	763.7	764.1	764.4	765.2
140°	780.7	781.7	782.7	783.7	784.7	785.4	785.9	786.4	786.9	787.4	788.0
142.5°	802.5	803.5	804.5	805.5	806.5	807.2	807.7	808.2	808.7	809.2	809.7
145°	833.0	834.1	835.3	836.4	837.6	838.3	838.6	839.0	839.3	839.6	839.9
147.5°	861.7	862.4	863.2	863.9	864.7	865.2	865.6	865.9	866.2	866.5	866.9
150°	879.4	879.8	880.3	880.8	881.3	881.7	882.1	882.4	882.7	883.0	883.4
152.5°	895.2	895.5	895.7	895.9	896.2	896.4	896.6	896.8	897.0	897.2	897.7
155°	917.6	917.3	917.0	916.6	916.3	916.2	916.4	916.6	916.7	916.9	917.7
157.5°	935.0	935.0	934.9	934.9	934.9	934.8	934.6	934.4	934.3	934.1	935.1
160°	945.6	945.4	945.3	945.1	944.9	944.8	944.6	944.4	944.3	944.1	945.1
162.5°	955.6	955.2	954.7	954.3	953.9	953.6	953.4	953.3	953.1	952.9	954.1
165°	967.7	967.2	966.7	966.2	965.7	965.4	965.2	965.0	964.9	964.7	966.0
167.5°	977.1	976.4	975.8	975.1	974.5	974.1	974.1	974.1	974.1	974.1	975.4
170°	982.4	981.7	981.1	980.4	979.8	979.4	979.4	979.4	979.4	979.4	980.7
172.5°	985.9	985.1	984.3	983.6	982.8	982.4	982.6	982.7	982.8	983.0	984.3
175°	990.5	989.6	988.8	988.0	987.2	986.9	987.0	987.2	987.4	987.5	988.7
177.5°	991.6	991.0	990.3	989.7	989.0	988.8	988.9	989.0	989.2	989.3	990.3
180°	990.5	990.5	990.5	990.5	990.5	990.5	990.5	990.5	990.5	990.5	990.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1828.1	1828.1	1828.1	1828.1	1828.1	1828.1	1828.1	1828.1
2.5°	1821.1	1823.9	1826.7	1828.0	1827.7	1827.4	1827.1	1826.9
5°	1811.5	1815.0	1818.5	1819.9	1819.2	1818.5	1817.8	1817.1
7.5°	1792.3	1795.4	1798.6	1799.9	1799.5	1799.1	1798.7	1798.3
10°	1774.7	1777.8	1781.0	1782.2	1781.5	1780.8	1780.1	1779.4
12.5°	1755.4	1757.7	1760.0	1761.0	1760.5	1760.1	1759.7	1759.3
15°	1720.5	1723.3	1726.1	1726.5	1724.4	1722.3	1720.2	1718.1
17.5°	1676.4	1678.4	1680.3	1680.9	1680.2	1679.4	1678.6	1677.9
20°	1643.9	1645.3	1646.7	1646.8	1645.8	1644.7	1643.7	1642.6
22.5°	1609.4	1610.5	1611.6	1611.5	1610.2	1608.8	1607.5	1606.2
25°	1552.2	1552.5	1552.9	1552.5	1551.5	1550.4	1549.4	1548.3
27.5°	1491.4	1491.6	1491.9	1491.4	1490.1	1488.7	1487.4	1486.1
30°	1449.3	1449.3	1449.3	1448.1	1445.6	1443.2	1440.7	1438.3
32.5°	1405.1	1403.2	1401.2	1399.6	1398.3	1396.9	1395.6	1394.3
35°	1333.5	1331.4	1329.3	1327.4	1325.6	1323.9	1322.1	1320.4
37.5°	1259.4	1256.9	1254.4	1252.6	1251.4	1250.3	1249.2	1248.1
40°	1211.1	1208.3	1205.5	1203.4	1202.0	1200.6	1199.2	1197.8
42.5°	1160.8	1158.0	1155.2	1153.1	1151.7	1150.3	1148.9	1147.5
45°	1085.7	1081.5	1077.3	1074.3	1072.6	1070.8	1069.1	1067.3
47.5°	1006.6	1002.5	998.3	995.5	994.0	992.4	990.9	989.4
50°	954.3	950.5	946.6	943.7	941.6	939.5	937.4	935.3
52.5°	901.4	898.1	894.8	892.1	890.0	887.9	885.8	883.7
55°	820.7	816.9	813.0	810.2	808.5	806.7	805.0	803.2
57.5°	741.4	738.0	734.5	731.8	729.8	727.8	725.7	723.7
60°	685.4	682.2	679.1	676.6	674.9	673.1	671.4	669.6
62.5°	631.3	628.1	625.0	622.8	621.6	620.4	619.3	618.1
65°	550.9	548.1	545.3	543.4	542.3	541.3	540.2	539.2
67.5°	471.1	468.6	466.2	464.2	462.8	461.3	459.8	458.4
70°	419.5	417.1	414.6	412.5	410.8	409.0	407.3	405.6
72.5°	367.3	365.1	362.9	361.4	360.5	359.6	358.7	357.8
75°	292.0	290.3	288.5	287.1	286.1	285.0	284.0	282.9
77.5°	221.8	220.6	219.4	218.8	218.8	218.8	218.8	218.8
80°	176.9	176.6	176.2	176.1	176.1	176.1	176.1	176.1
82.5°	136.1	135.5	134.9	134.4	134.1	133.9	133.6	133.3
85°	77.2	76.5	75.8	75.5	75.5	75.5	75.5	75.5
87.5°	30.9	30.8	30.6	30.6	30.6	30.7	30.8	30.8
90°	19.0	19.6	20.3	20.8	21.1	21.4	21.7	22.1
92.5°	20.9	22.0	23.0	23.6	23.8	24.0	24.2	24.4
95°	25.1	26.2	27.4	28.0	28.0	28.0	28.0	28.0
97.5°	26.3	27.6	28.9	29.7	29.8	30.0	30.2	30.3
100°	26.9	28.2	29.5	30.3	30.4	30.6	30.7	30.9
102.5°	40.3	36.3	32.2	30.3	30.6	30.9	31.2	31.5
105°	103.3	74.3	45.4	31.1	31.4	31.7	32.1	32.4
107.5°	252.9	231.7	210.5	189.0	167.1	145.3	123.5	101.7
110°	321.1	315.7	310.3	295.9	272.5	249.1	225.7	202.4



TEST NUMBER: P332220

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	369.2	369.3	369.4	366.9	362.0	357.1	352.1	347.2
115°	425.7	427.3	428.9	430.1	430.7	431.4	432.0	432.7
117.5°	476.8	478.1	479.4	480.1	480.3	480.4	480.5	480.7
120°	510.4	511.7	513.0	513.6	513.6	513.6	513.6	513.6
122.5°	543.1	544.0	545.0	545.5	545.6	545.7	545.9	546.0
125°	589.3	589.7	590.0	590.3	590.7	591.0	591.3	591.6
127.5°	635.7	636.2	636.7	636.8	636.5	636.1	635.8	635.5
130°	663.6	664.2	664.9	665.1	664.7	664.4	664.1	663.7
132.5°	690.1	690.7	691.4	691.5	691.0	690.6	690.1	689.6
135°	730.2	730.7	731.2	731.2	730.7	730.2	729.7	729.2
137.5°	766.0	766.8	767.6	767.8	767.5	767.1	766.8	766.5
140°	788.7	789.3	790.0	790.2	789.8	789.5	789.2	788.8
142.5°	810.2	810.7	811.2	811.3	810.8	810.4	809.9	809.4
145°	840.3	840.6	840.9	841.1	841.1	841.1	841.1	841.1
147.5°	867.2	867.5	867.9	867.6	866.9	866.1	865.4	864.6
150°	883.7	884.0	884.3	884.3	883.8	883.3	882.8	882.3
152.5°	898.3	898.9	899.5	899.4	898.7	897.9	897.2	896.4
155°	918.5	919.3	920.2	920.1	919.1	918.1	917.1	916.1
157.5°	936.1	937.0	938.0	937.9	936.6	935.3	934.1	932.8
160°	946.1	947.1	948.0	948.0	946.8	945.7	944.5	943.4
162.5°	955.2	956.3	957.4	957.4	956.4	955.4	954.4	953.4
165°	967.3	968.6	969.9	970.0	968.9	967.7	966.6	965.4
167.5°	976.7	978.1	979.4	979.4	978.1	976.7	975.4	974.1
170°	982.0	983.4	984.7	984.7	983.4	982.0	980.7	979.4
172.5°	985.6	986.9	988.2	988.1	986.7	985.3	983.8	982.4
175°	989.8	991.0	992.1	992.0	990.7	989.4	988.1	986.8
177.5°	991.4	992.4	993.5	993.3	992.0	990.7	989.4	988.1
180°	990.5	990.5	990.5	990.5	990.5	990.5	990.5	990.5

(END OF REPORT)