

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: P332803

Luminaire Tested: **S124DIW-S795D1560U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332803  
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: S124DIW-S795D1560U835-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 795 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1560 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9649.2 lumens  
Efficiency: N/A  
Efficacy: 141.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

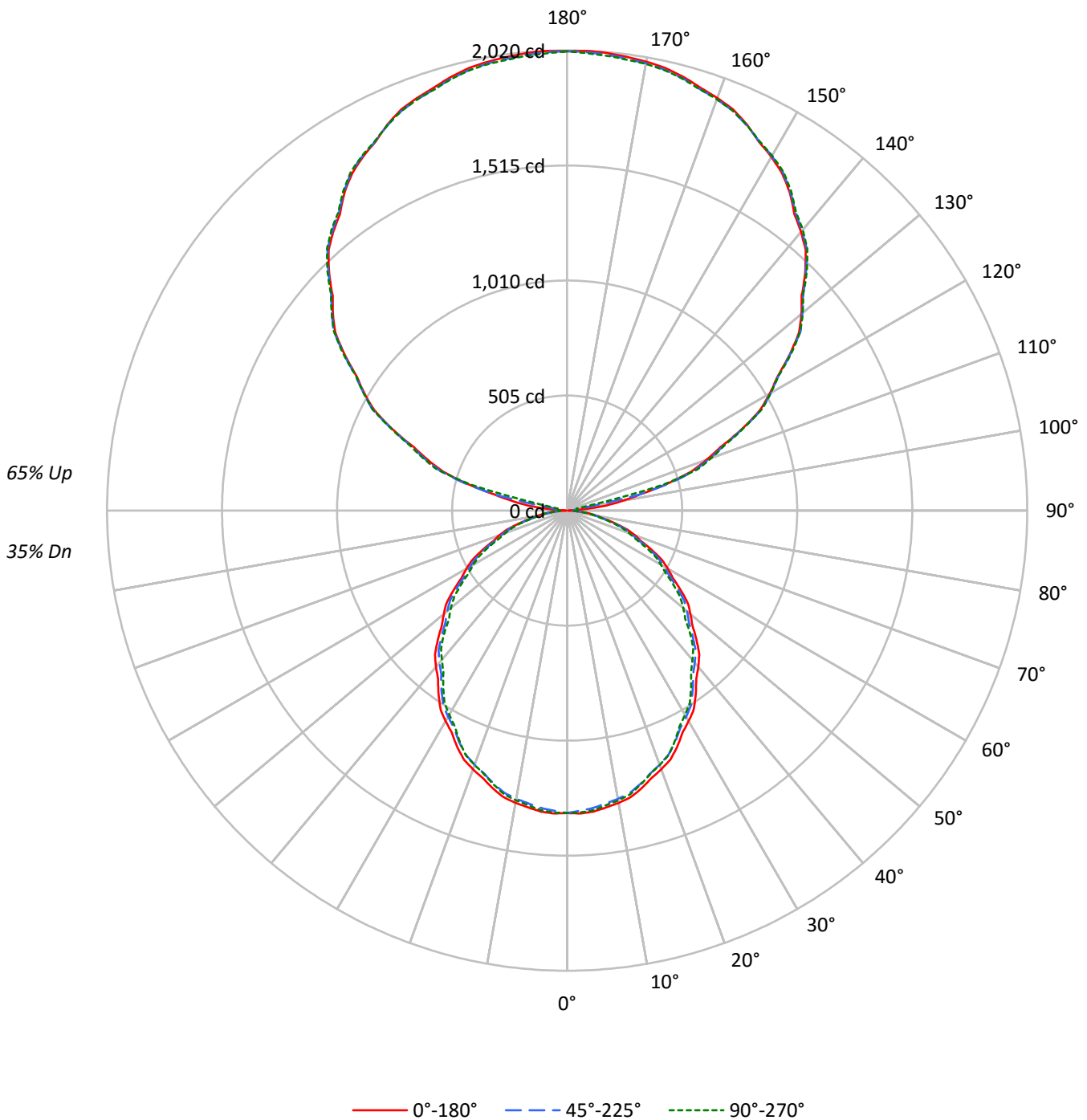
Input Watts (W): 68.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	43	43	43	35
1	94	90	86	83	85	82	78	76	66	64	62	51	50	48	38	37	36	30
2	86	79	73	68	77	71	66	62	58	54	51	45	42	40	33	32	30	25
3	78	69	62	56	71	63	57	52	51	46	43	40	37	34	29	27	26	21
4	72	61	53	48	65	56	49	44	45	40	36	35	32	29	26	24	22	18
5	66	54	46	41	59	49	43	37	40	35	31	32	28	25	24	21	19	16
6	60	49	41	35	54	44	37	32	36	31	27	29	25	22	21	19	17	14
7	56	44	36	31	50	40	33	28	33	28	24	26	22	19	19	17	15	12
8	52	40	32	27	47	36	30	25	30	25	21	24	20	17	18	15	13	11
9	48	36	29	24	43	33	27	22	27	22	19	22	18	15	16	14	12	10
10	45	33	26	21	41	30	24	20	25	20	17	20	16	14	15	13	11	9

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	10717	10717	10717
5°	10749	10619	10697
10°	10681	10533	10585
15°	10552	10384	10410
20°	10381	10198	10207
25°	10185	9986	9958
30°	9945	9737	9648
35°	9697	9477	9351
40°	9438	9180	9013
45°	9169	8889	8719
50°	8871	8629	8363
55°	8549	8294	8024
60°	8226	7918	7677
65°	7862	7559	7253
70°	7456	7081	6805
75°	6834	6503	6338
80°	6081	5835	5686
85°	5317	5122	5020



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	125.0	1.3
10°-20°	352.2	3.7
20°-30°	518.4	5.4
30°-40°	602.7	6.2
40°-50°	602.7	6.2
50°-60°	527.2	5.5
60°-70°	391.5	4.1
70°-80°	222.4	2.3
80°-90°	70.0	0.7
90°-100°	69.0	0.7
100°-110°	439.7	4.6
110°-120°	841.1	8.7
120°-130°	1067.8	11.1
130°-140°	1142.4	11.8
140°-150°	1068.3	11.1
150°-160°	861.5	8.9
160°-170°	555.6	5.8
170°-180°	191.5	2.0
0°-30°	995.7	10.3
0°-40°	1598.4	16.6
0°-60°	2728.3	28.3
0°-90°	3412.3	35.4
90°-120°	1349.8	14.0
90°-150°	4628.2	48.0
90°-180°	6237.0	64.6
0°-180°	9649.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1328	1328	1328	1328	1328	
5°	1326	1322	1310	1321	1320	126
15°	1263	1258	1242	1248	1246	356
25°	1143	1136	1121	1122	1118	526
35°	984	976	962	954	949	615
45°	803	795	779	767	764	619
55°	607	604	589	577	570	544
65°	412	406	396	385	380	407
75°	219	214	208	204	203	233
85°	57	57	55	55	54	63
90°	4	21	33	42	45	7
95°	83	35	33	42	44	107
105°	454	463	470	480	430	475
115°	848	852	850	853	854	834
125°	1191	1197	1194	1199	1200	1063
135°	1478	1477	1482	1485	1488	1138
145°	1704	1708	1709	1710	1713	1064
155°	1868	1870	1865	1871	1867	861
165°	1971	1964	1964	1974	1962	557
175°	2016	2008	2009	2021	2004	192
180°	2016	2016	2016	2016	2016	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1327.5	1327.5	1327.5	1327.5	1327.5	1327.5	1327.5	1327.5	1327.5	1327.5	1327.5
2.5°	1330.9	1330.3	1329.7	1329.2	1328.6	1327.3	1325.2	1323.1	1321.0	1319.0	1320.8
5°	1326.4	1325.5	1324.5	1323.6	1322.6	1320.8	1318.2	1315.6	1313.0	1310.4	1313.0
7.5°	1314.1	1313.1	1312.2	1311.2	1310.3	1308.4	1305.5	1302.6	1299.7	1296.8	1298.9
10°	1303.0	1302.1	1301.1	1300.2	1299.2	1297.2	1294.1	1291.1	1288.0	1284.9	1286.8
12.5°	1288.5	1287.6	1286.6	1285.7	1284.8	1282.6	1279.4	1276.1	1272.9	1269.6	1271.7
15°	1262.6	1261.6	1260.7	1259.7	1258.8	1256.6	1253.0	1249.5	1245.9	1242.4	1243.8
17.5°	1231.3	1230.1	1228.9	1227.8	1226.6	1224.3	1221.0	1217.6	1214.2	1210.9	1211.8
20°	1208.3	1207.1	1206.0	1204.8	1203.6	1201.2	1197.7	1194.1	1190.6	1187.1	1187.8
22.5°	1183.7	1182.1	1180.5	1179.0	1177.4	1174.9	1171.3	1167.8	1164.2	1160.7	1162.0
25°	1143.4	1141.8	1140.1	1138.5	1136.8	1134.3	1131.0	1127.7	1124.4	1121.1	1121.3
27.5°	1097.5	1095.8	1094.1	1092.4	1090.7	1088.3	1085.2	1082.2	1079.1	1076.0	1075.4
30°	1066.9	1065.0	1063.1	1061.2	1059.3	1056.8	1053.7	1050.7	1047.6	1044.5	1043.6
32.5°	1034.5	1032.8	1031.1	1029.4	1027.7	1025.2	1022.0	1018.7	1015.5	1012.2	1011.1
35°	983.9	982.2	980.6	978.9	977.3	974.8	971.5	968.2	964.9	961.6	959.9
37.5°	930.5	929.0	927.5	926.0	924.4	921.9	918.4	914.8	911.3	907.7	905.9
40°	895.6	893.7	891.8	889.9	888.0	885.3	881.8	878.2	874.7	871.1	868.8
42.5°	858.2	857.0	855.9	854.8	853.6	851.1	847.2	843.3	839.3	835.4	832.7
45°	803.1	801.4	799.8	798.1	796.5	793.7	790.0	786.2	782.4	778.6	776.0
47.5°	745.4	744.3	743.2	742.0	740.9	738.6	735.1	731.6	728.1	724.6	721.6
50°	706.3	705.3	704.4	703.4	702.5	700.4	697.1	693.8	690.4	687.1	683.8
52.5°	668.0	666.9	665.7	664.6	663.4	661.1	657.6	654.1	650.6	647.1	644.2
55°	607.4	606.6	605.9	605.2	604.5	602.5	599.2	595.9	592.6	589.3	586.4
57.5°	549.5	548.7	547.9	547.1	546.3	544.2	541.0	537.7	534.5	531.2	528.5
60°	509.5	508.3	507.1	506.0	504.8	502.6	499.6	496.5	493.4	490.4	488.2
62.5°	470.4	469.4	468.4	467.4	466.4	464.3	461.0	457.7	454.5	451.2	449.3
65°	411.6	410.5	409.3	408.1	406.9	405.1	402.8	400.4	398.0	395.7	393.3
67.5°	352.5	351.4	350.3	349.2	348.2	346.5	344.2	341.9	339.7	337.4	335.1
70°	315.9	314.3	312.6	310.9	309.3	307.5	305.6	303.7	301.8	300.0	298.1
72.5°	276.8	275.1	273.5	271.8	270.1	268.6	267.1	265.5	264.0	262.5	261.0
75°	219.1	217.9	216.8	215.6	214.4	213.2	212.0	210.8	209.7	208.5	207.5
77.5°	164.0	163.5	163.0	162.5	161.9	161.2	160.1	159.1	158.0	157.0	156.7
80°	130.8	130.1	129.4	128.7	128.0	127.4	126.9	126.5	126.0	125.5	125.0
82.5°	98.5	98.2	97.8	97.5	97.2	97.0	96.9	96.8	96.7	96.6	96.3
85°	57.4	57.4	57.4	57.4	57.4	57.2	56.7	56.3	55.8	55.3	55.3
87.5°	23.0	23.6	24.1	24.7	25.2	25.7	26.0	26.4	26.7	27.1	27.5
90°	4.5	8.2	11.9	15.6	19.3	22.5	25.1	27.8	30.5	33.2	35.2
92.5°	19.0	19.2	19.4	19.6	19.8	21.2	23.9	26.6	29.3	32.0	34.0
95°	82.9	71.5	60.2	48.8	37.4	31.8	32.2	32.5	32.8	33.2	35.2
97.5°	176.1	183.2	190.3	197.5	204.6	189.4	152.0	114.6	77.2	39.8	40.0
100°	247.3	253.4	259.4	265.4	271.4	251.3	205.1	158.8	112.6	66.4	60.7
102.5°	326.9	331.4	335.8	340.2	344.6	343.8	337.8	331.8	325.7	319.7	258.2
105°	453.9	455.9	457.9	460.0	462.0	463.8	465.5	467.2	468.8	470.5	473.5
107.5°	571.8	572.9	573.9	574.9	575.9	577.5	579.8	582.1	584.3	586.6	588.1
110°	651.5	652.5	653.5	654.5	655.5	657.0	659.0	661.0	663.0	665.0	665.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	728.7	730.5	732.3	734.1	735.9	737.3	738.2	739.2	740.1	741.1	740.9
115°	847.5	848.5	849.5	850.5	851.5	851.9	851.5	851.2	850.9	850.5	851.2
117.5°	954.6	955.9	957.3	958.6	960.0	961.0	961.7	962.5	963.2	963.9	963.8
120°	1027.0	1028.3	1029.7	1031.0	1032.3	1032.8	1032.5	1032.2	1031.8	1031.5	1032.2
122.5°	1094.5	1095.3	1096.1	1096.9	1097.8	1098.4	1098.9	1099.3	1099.8	1100.3	1100.7
125°	1191.4	1192.7	1194.0	1195.4	1196.7	1197.0	1196.4	1195.7	1195.0	1194.4	1195.4
127.5°	1283.0	1283.4	1283.7	1284.0	1284.4	1285.3	1286.9	1288.4	1289.9	1291.5	1291.3
130°	1342.2	1342.5	1342.8	1343.2	1343.5	1344.2	1345.2	1346.2	1347.2	1348.2	1348.5
132.5°	1396.4	1397.0	1397.7	1398.3	1398.9	1399.8	1401.1	1402.3	1403.6	1404.9	1405.2
135°	1477.9	1477.5	1477.2	1476.9	1476.5	1477.0	1478.4	1479.7	1481.1	1482.4	1483.1
137.5°	1550.0	1550.1	1550.2	1550.4	1550.5	1551.3	1552.8	1554.3	1555.7	1557.2	1557.9
140°	1597.0	1597.7	1598.4	1599.0	1599.7	1600.4	1601.0	1601.7	1602.4	1603.0	1604.1
142.5°	1639.2	1640.4	1641.7	1642.9	1644.1	1644.9	1645.3	1645.7	1646.1	1646.5	1647.2
145°	1704.1	1705.1	1706.1	1707.1	1708.1	1708.6	1708.6	1708.6	1708.6	1708.6	1708.9
147.5°	1755.7	1757.5	1759.4	1761.3	1763.2	1763.9	1763.6	1763.6	1762.9	1762.6	1762.9
150°	1793.1	1794.4	1795.7	1797.1	1798.4	1798.9	1798.6	1798.3	1797.9	1797.6	1797.6
152.5°	1824.4	1825.5	1826.6	1827.6	1828.7	1829.0	1828.3	1827.7	1827.1	1826.5	1827.1
155°	1868.5	1868.8	1869.1	1869.5	1869.8	1869.5	1868.5	1867.5	1866.5	1865.4	1866.8
157.5°	1905.6	1905.4	1905.2	1905.0	1904.8	1904.1	1902.9	1901.8	1900.7	1899.5	1901.3
160°	1927.3	1926.3	1925.3	1924.3	1923.3	1922.6	1922.2	1921.9	1921.6	1921.2	1923.3
162.5°	1946.6	1945.3	1944.0	1942.8	1941.5	1940.7	1940.3	1940.0	1939.7	1939.3	1941.3
165°	1971.0	1969.3	1967.7	1966.0	1964.3	1963.5	1963.5	1963.5	1963.5	1963.5	1966.1
167.5°	1990.3	1988.6	1986.8	1985.1	1983.3	1982.4	1982.2	1982.0	1981.8	1981.6	1984.5
170°	2001.2	1999.2	1997.1	1995.1	1993.1	1992.3	1992.6	1993.0	1993.3	1993.6	1996.3
172.5°	2008.4	2006.4	2004.4	2002.4	2000.4	1999.5	1999.9	2000.2	2000.5	2000.9	2003.5
175°	2016.2	2014.2	2012.2	2010.2	2008.2	2007.4	2007.7	2008.0	2008.4	2008.7	2011.7
177.5°	2019.9	2018.0	2016.1	2014.2	2012.4	2011.7	2012.2	2012.8	2013.3	2013.8	2016.0
180°	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1327.5	1327.5	1327.5	1327.5	1327.5	1327.5	1327.5	1327.5
2.5°	1322.7	1324.6	1326.5	1327.4	1327.2	1327.0	1326.8	1326.6
5°	1315.6	1318.2	1320.8	1321.9	1321.4	1321.0	1320.5	1320.0
7.5°	1301.0	1303.1	1305.1	1306.0	1305.8	1305.5	1305.2	1304.9
10°	1288.7	1290.6	1292.5	1293.2	1292.7	1292.2	1291.8	1291.3
12.5°	1273.8	1275.8	1277.9	1278.6	1278.0	1277.3	1276.6	1276.0
15°	1245.2	1246.6	1248.0	1248.4	1247.7	1247.0	1246.3	1245.6
17.5°	1212.7	1213.6	1214.5	1214.7	1214.2	1213.7	1213.3	1212.8
20°	1188.5	1189.2	1189.9	1190.0	1189.5	1189.1	1188.6	1188.1
22.5°	1163.2	1164.5	1165.8	1166.0	1165.1	1164.3	1163.4	1162.6
25°	1121.6	1121.8	1122.1	1121.7	1120.8	1119.8	1118.9	1117.9
27.5°	1074.9	1074.3	1073.7	1072.9	1071.7	1070.5	1069.3	1068.1
30°	1042.6	1041.7	1040.7	1039.7	1038.5	1037.3	1036.1	1035.0
32.5°	1009.9	1008.8	1007.7	1006.5	1005.3	1004.1	1002.9	1001.8
35°	958.3	956.6	954.9	953.5	952.3	951.2	950.0	948.8
37.5°	904.1	902.3	900.6	898.9	897.3	895.8	894.2	892.6
40°	866.4	864.1	861.7	859.9	858.7	857.6	856.4	855.2
42.5°	829.9	827.2	824.4	822.7	821.9	821.1	820.3	819.5
45°	773.4	770.8	768.2	766.6	765.8	765.1	764.4	763.7
47.5°	718.7	715.8	712.8	710.5	708.7	706.9	705.1	703.3
50°	680.5	677.2	673.9	671.5	670.1	668.7	667.3	665.9
52.5°	641.3	638.3	635.4	633.1	631.3	629.5	627.7	625.9
55°	583.6	580.8	577.9	575.8	574.4	573.0	571.5	570.1
57.5°	525.8	523.1	520.4	518.4	517.0	515.6	514.3	512.9
60°	486.1	484.0	481.8	480.2	479.0	477.8	476.6	475.5
62.5°	447.3	445.4	443.5	441.9	440.7	439.5	438.4	437.2
65°	391.0	388.6	386.2	384.5	383.3	382.1	380.9	379.7
67.5°	332.9	330.6	328.3	327.0	326.7	326.4	326.0	325.7
70°	296.2	294.3	292.4	291.1	290.4	289.7	289.0	288.3
72.5°	259.5	258.0	256.5	255.4	254.6	253.9	253.2	252.5
75°	206.6	205.6	204.7	204.1	203.9	203.6	203.4	203.2
77.5°	156.4	156.1	155.9	155.4	154.8	154.2	153.6	153.0
80°	124.6	124.1	123.6	123.3	123.0	122.8	122.6	122.3
82.5°	96.0	95.7	95.4	95.2	95.0	94.7	94.5	94.2
85°	55.3	55.3	55.3	55.2	55.0	54.7	54.5	54.2
87.5°	27.9	28.3	28.7	28.9	29.1	29.2	29.3	29.5
90°	37.2	39.2	41.2	42.6	43.2	43.9	44.6	45.2
92.5°	36.0	38.0	40.0	41.1	41.2	41.4	41.5	41.6
95°	37.2	39.2	41.2	42.4	42.7	43.1	43.4	43.7
97.5°	40.2	40.4	40.6	40.9	41.2	41.6	41.9	42.2
100°	55.0	49.3	43.6	40.9	41.2	41.6	41.9	42.2
102.5°	196.8	135.3	73.9	43.2	43.2	43.3	43.4	43.4
105°	476.5	479.6	482.6	478.0	466.0	453.9	441.9	429.8
107.5°	589.6	591.1	592.5	593.9	595.2	596.4	597.7	599.0
110°	666.4	667.1	667.7	668.6	669.6	670.6	671.6	672.6





TEST NUMBER: P332803

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	740.8	740.6	740.5	741.1	742.4	743.6	744.9	746.2
115°	851.9	852.5	853.2	853.6	853.6	853.6	853.6	853.6
117.5°	963.7	963.5	963.4	963.3	963.1	963.0	962.9	962.7
120°	1032.8	1033.5	1034.2	1034.2	1033.5	1032.8	1032.2	1031.5
122.5°	1101.1	1101.5	1101.9	1101.7	1101.1	1100.4	1099.7	1099.1
125°	1196.4	1197.4	1198.4	1199.1	1199.4	1199.7	1200.1	1200.4
127.5°	1291.1	1290.9	1290.7	1290.4	1290.2	1289.9	1289.6	1289.4
130°	1348.9	1349.2	1349.5	1349.7	1349.7	1349.7	1349.7	1349.7
132.5°	1405.6	1405.9	1406.2	1406.3	1406.0	1405.7	1405.5	1405.2
135°	1483.7	1484.4	1485.1	1485.8	1486.4	1487.1	1487.8	1488.4
137.5°	1558.7	1559.4	1560.2	1560.4	1560.2	1560.0	1559.8	1559.6
140°	1605.1	1606.1	1607.1	1607.7	1608.1	1608.4	1608.7	1609.1
142.5°	1648.0	1648.7	1649.4	1649.8	1649.9	1650.0	1650.0	1650.1
145°	1709.3	1709.6	1709.9	1710.5	1711.1	1711.8	1712.5	1713.1
147.5°	1763.1	1763.4	1763.7	1764.0	1764.3	1764.6	1765.0	1765.3
150°	1797.6	1797.6	1797.6	1797.8	1798.1	1798.4	1798.8	1799.1
152.5°	1827.6	1828.1	1828.7	1828.8	1828.6	1828.4	1828.2	1828.0
155°	1868.1	1869.5	1870.8	1871.0	1870.0	1869.0	1868.0	1867.0
157.5°	1903.0	1904.8	1906.5	1906.5	1904.8	1903.0	1901.3	1899.5
160°	1925.3	1927.3	1929.3	1929.3	1927.3	1925.3	1923.3	1921.2
162.5°	1943.4	1945.4	1947.4	1947.2	1945.0	1942.7	1940.4	1938.1
165°	1968.8	1971.5	1974.2	1974.0	1971.0	1968.0	1965.0	1962.0
167.5°	1987.5	1990.4	1993.4	1993.2	1989.8	1986.5	1983.1	1979.8
170°	1999.0	2001.7	2004.4	2004.0	2000.7	1997.3	1994.0	1990.6
172.5°	2006.2	2008.9	2011.6	2011.1	2007.5	2003.9	2000.3	1996.6
175°	2014.7	2017.8	2020.8	2020.3	2016.2	2012.2	2008.2	2004.2
177.5°	2018.1	2020.3	2022.4	2021.9	2018.7	2015.4	2012.2	2009.0
180°	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2	2016.2

(END OF REPORT)