

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: P332214

Luminaire Tested: **S123DIW-S1165D460U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332214
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-S1165D460U835-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6602.8 lumens
Efficiency: N/A
Efficacy: 126.0 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

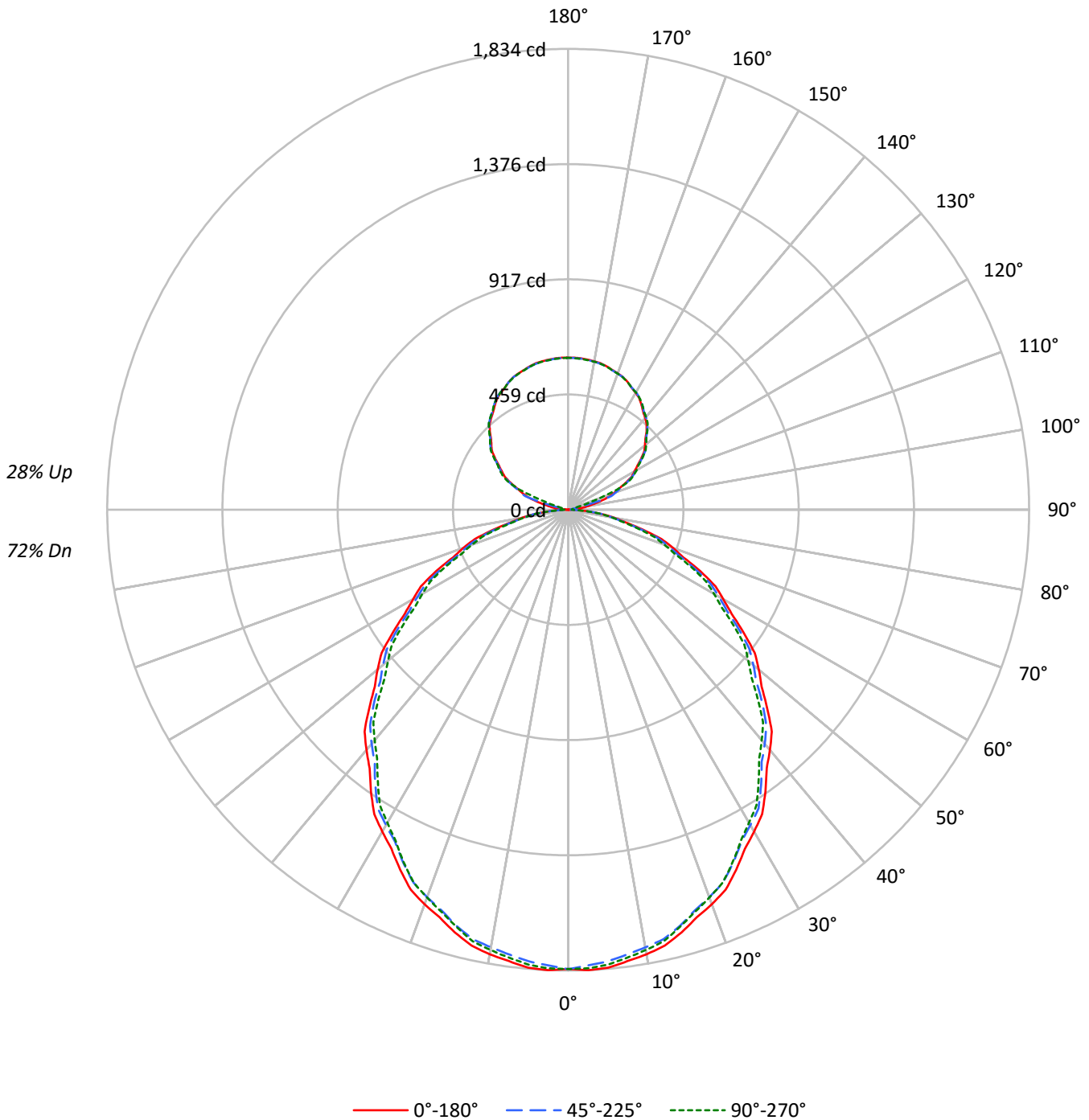
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0		
RCR																										
0	112	112	112	112	107	107	107	107	96	96	96	86	86	86	76	76	76	76	76	76	76	76	76	72		
1	103	98	94	90	97	93	90	86	84	81	79	75	73	71	67	66	64	64	64	64	64	64	64	61		
2	93	86	79	74	88	81	76	71	73	69	65	66	63	59	59	57	54	54	54	54	54	54	54	51		
3	85	75	68	62	80	72	65	59	65	59	55	58	54	50	53	49	46	46	46	46	46	46	46	43		
4	78	67	58	52	74	64	56	50	58	52	47	52	47	43	47	43	40	40	40	40	40	40	40	37		
5	72	60	51	45	68	57	49	43	52	45	40	47	42	37	42	38	35	35	35	35	35	35	35	32		
6	66	54	45	39	63	51	43	38	47	40	35	42	37	33	38	34	30	30	30	30	30	30	30	28		
7	61	49	40	34	58	46	39	33	42	36	31	39	33	29	35	31	27	27	27	27	27	27	27	25		
8	57	44	36	31	54	42	35	30	39	32	28	35	30	26	32	28	24	24	24	24	24	24	24	22		
9	53	40	33	27	50	39	32	27	36	29	25	33	27	24	30	25	22	22	22	22	22	22	22	20		
10	50	37	30	25	47	36	29	24	33	27	23	30	25	21	28	23	20	20	20	20	20	20	20	18		

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	2.6
10°-20°	486.2	7.4
20°-30°	718.3	10.9
30°-40°	839.0	12.7
40°-50°	843.5	12.8
50°-60°	740.9	11.2
60°-70°	552.0	8.4
70°-80°	314.5	4.8
80°-90°	92.0	1.4
90°-100°	22.0	0.3
100°-110°	104.8	1.6
110°-120°	251.7	3.8
120°-130°	320.5	4.9
130°-140°	342.4	5.2
140°-150°	320.2	4.8
150°-160°	258.3	3.9
160°-170°	166.7	2.5
170°-180°	57.5	0.9
0°-30°	1376.7	20.9
0°-40°	2215.7	33.6
0°-60°	3800.2	57.6
0°-90°	4758.6	72.1
90°-120°	378.5	5.7
90°-150°	1361.6	20.6
90°-180°	1844.0	27.9
0°-180°	6602.8	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°	0	5	11	13	14	6
95°	27	10	14	17	17	34
105°	134	136	98	23	20	142
115°	251	254	258	262	264	248
125°	354	358	359	360	361	316
135°	441	443	445	446	445	339
145°	509	512	513	513	514	318
155°	560	559	560	562	559	258
165°	591	590	589	592	590	167
175°	605	603	603	606	602	58
180°	605	605	605	605	605	



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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	32.1	31.5	30.9	30.2	29.9	29.9	29.9	29.8	29.8	29.6
90°	0.4	1.4	2.4	3.4	4.4	5.6	6.9	8.2	9.5	10.8	11.2
92.5°	8.4	8.1	7.8	7.5	7.2	7.6	8.6	9.5	10.5	11.5	12.1
95°	27.4	23.3	19.2	15.1	11.0	9.5	10.6	11.7	12.8	13.9	14.6
97.5°	55.1	53.2	51.4	49.6	47.7	43.2	36.0	28.8	21.7	14.5	15.3
100°	75.9	77.9	79.9	81.9	83.9	77.1	61.6	46.0	30.4	14.8	15.6
102.5°	99.6	101.1	102.5	104.0	105.4	97.6	80.6	63.6	46.6	29.6	27.1
105°	133.9	135.0	136.1	137.2	138.3	134.3	125.3	116.4	107.4	98.4	80.7
107.5°	170.0	170.9	171.8	172.6	173.5	174.7	176.1	177.5	178.9	180.3	167.4
110°	194.1	194.9	195.7	196.5	197.3	198.2	199.3	200.4	201.5	202.6	199.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	217.1	217.8	218.5	219.2	220.0	220.9	222.0	223.1	224.2	225.3	225.3
115°	251.1	251.7	252.3	252.9	253.5	254.3	255.2	256.1	257.0	257.9	258.9
117.5°	284.1	284.9	285.6	286.3	287.1	287.7	288.1	288.6	289.1	289.5	290.3
120°	304.6	305.5	306.4	307.3	308.2	308.8	309.1	309.4	309.7	310.0	310.8
122.5°	325.5	326.2	326.9	327.7	328.4	329.0	329.4	329.7	330.1	330.5	331.0
125°	354.0	354.8	355.6	356.4	357.2	357.8	358.2	358.6	359.0	359.4	359.6
127.5°	381.7	382.5	383.3	384.1	384.9	385.5	386.0	386.5	387.0	387.5	387.8
130°	399.0	399.8	400.6	401.4	402.2	402.8	403.2	403.6	404.0	404.3	404.7
132.5°	415.5	416.3	417.1	417.9	418.7	419.2	419.6	419.9	420.2	420.5	420.9
135°	440.7	441.3	441.9	442.5	443.1	443.6	444.0	444.4	444.8	445.2	445.5
137.5°	462.3	463.1	463.8	464.6	465.3	465.8	466.1	466.3	466.5	466.7	467.2
140°	476.7	477.3	477.9	478.5	479.1	479.5	479.8	480.1	480.4	480.7	481.1
142.5°	490.0	490.6	491.2	491.8	492.4	492.8	493.1	493.4	493.7	494.0	494.3
145°	508.6	509.3	510.0	510.7	511.4	511.8	512.0	512.2	512.4	512.6	512.8
147.5°	526.1	526.6	527.0	527.5	527.9	528.3	528.5	528.7	528.9	529.1	529.3
150°	536.9	537.2	537.5	537.8	538.1	538.3	538.5	538.7	538.9	539.1	539.3
152.5°	546.6	546.7	546.9	547.0	547.2	547.3	547.4	547.5	547.6	547.8	548.1
155°	560.2	560.0	559.8	559.7	559.5	559.4	559.5	559.6	559.7	559.8	560.3
157.5°	570.9	570.8	570.8	570.8	570.8	570.7	570.6	570.5	570.4	570.3	570.9
160°	577.3	577.2	577.1	577.0	576.9	576.8	576.7	576.6	576.5	576.4	577.0
162.5°	583.4	583.2	582.9	582.7	582.4	582.2	582.1	582.0	581.9	581.8	582.5
165°	590.8	590.5	590.2	589.9	589.6	589.4	589.3	589.2	589.1	589.0	589.8
167.5°	596.6	596.2	595.8	595.4	595.0	594.8	594.8	594.8	594.8	594.8	595.6
170°	599.8	599.4	599.0	598.6	598.2	598.0	598.0	598.0	598.0	598.0	598.8
172.5°	601.9	601.5	601.0	600.5	600.0	599.8	599.9	600.0	600.1	600.1	600.9
175°	604.7	604.2	603.7	603.2	602.7	602.5	602.6	602.7	602.8	602.9	603.6
177.5°	605.4	605.0	604.6	604.2	603.8	603.7	603.8	603.8	603.9	604.0	604.6
180°	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7



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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°	29.4	29.2	29.0	28.9	29.0	29.0	29.1	29.1
90°	11.6	12.0	12.4	12.7	12.9	13.1	13.3	13.5
92.5°	12.8	13.4	14.1	14.4	14.6	14.7	14.8	14.9
95°	15.3	16.0	16.7	17.1	17.1	17.1	17.1	17.1
97.5°	16.1	16.9	17.7	18.1	18.2	18.3	18.4	18.5
100°	16.4	17.2	18.0	18.5	18.6	18.7	18.8	18.9
102.5°	24.6	22.1	19.7	18.5	18.7	18.9	19.0	19.2
105°	63.0	45.4	27.7	19.0	19.2	19.4	19.6	19.8
107.5°	154.4	141.5	128.5	115.4	102.0	88.7	75.4	62.1
110°	196.0	192.7	189.4	180.7	166.4	152.1	137.8	123.6



TEST NUMBER: P332214

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	225.4	225.4	225.5	224.0	221.0	218.0	215.0	212.0
115°	259.9	260.9	261.9	262.6	263.0	263.4	263.8	264.2
117.5°	291.1	291.9	292.7	293.1	293.2	293.3	293.4	293.5
120°	311.6	312.4	313.2	313.6	313.6	313.6	313.6	313.6
122.5°	331.6	332.2	332.7	333.0	333.1	333.2	333.3	333.4
125°	359.8	360.0	360.2	360.4	360.6	360.8	361.0	361.2
127.5°	388.1	388.4	388.7	388.8	388.6	388.4	388.2	388.0
130°	405.1	405.5	405.9	406.0	405.8	405.6	405.4	405.2
132.5°	421.3	421.7	422.1	422.2	421.9	421.6	421.3	421.1
135°	445.8	446.1	446.4	446.4	446.1	445.8	445.5	445.2
137.5°	467.7	468.1	468.6	468.8	468.6	468.4	468.2	468.0
140°	481.5	481.9	482.3	482.4	482.2	482.0	481.8	481.6
142.5°	494.7	495.0	495.3	495.3	495.0	494.8	494.5	494.2
145°	513.0	513.2	513.4	513.5	513.5	513.5	513.5	513.5
147.5°	529.5	529.7	529.9	529.7	529.3	528.8	528.4	527.9
150°	539.5	539.7	539.9	539.9	539.6	539.3	539.0	538.7
152.5°	548.5	548.8	549.2	549.1	548.7	548.2	547.8	547.3
155°	560.8	561.3	561.8	561.7	561.1	560.5	559.9	559.4
157.5°	571.5	572.1	572.7	572.6	571.8	571.1	570.3	569.5
160°	577.6	578.2	578.8	578.8	578.1	577.4	576.7	576.0
162.5°	583.2	583.9	584.5	584.6	583.9	583.3	582.7	582.1
165°	590.6	591.4	592.2	592.2	591.5	590.9	590.2	589.5
167.5°	596.4	597.1	597.9	597.9	597.1	596.4	595.6	594.8
170°	599.6	600.4	601.2	601.2	600.4	599.6	598.8	598.0
172.5°	601.7	602.5	603.3	603.3	602.4	601.5	600.7	599.8
175°	604.3	605.0	605.7	605.7	604.9	604.1	603.3	602.5
177.5°	605.3	605.9	606.6	606.5	605.7	604.9	604.1	603.3
180°	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7

(END OF REPORT)