

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: P332221-830

Luminaire Tested: **S123DIW-S1165D755U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332221-830  
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-S1165D755U830-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 755 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6953.8 lumens  
Efficiency: N/A  
Efficacy: 116.3 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

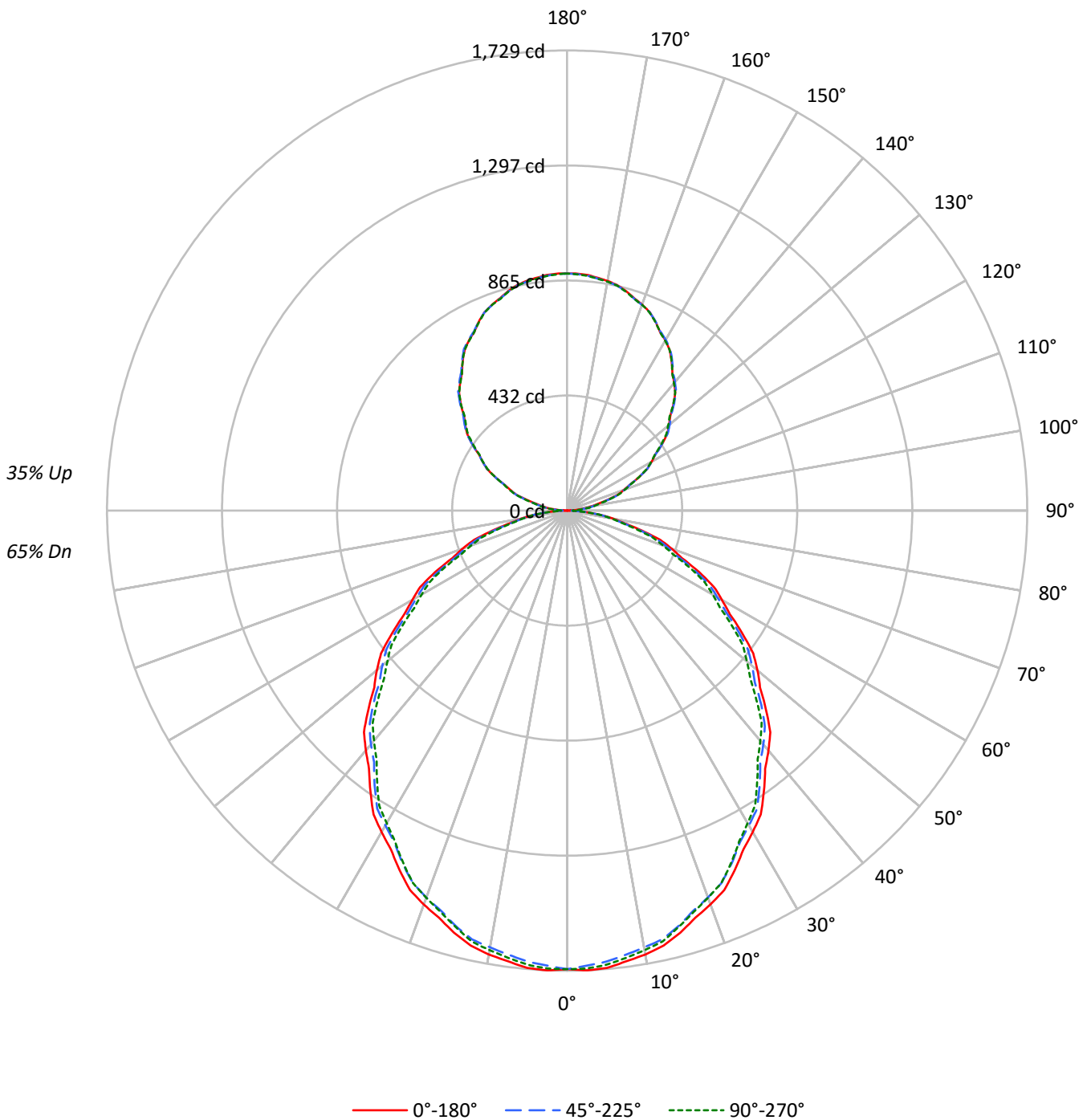
Input Watts (W): 59.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20						20								20		
RC	80					70						30								10	0	
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10	0
RCR																						
0	111	111	111	111		104	104	104	104		91	91	91		80	80	80		69	69	69	65
1	101	96	92	89		95	91	87	84		80	77	75		70	68	67		61	60	59	54
2	92	84	78	73		86	79	74	69		70	66	62		62	58	56		54	51	49	45
3	84	74	66	60		78	70	63	58		62	57	52		55	50	47		48	45	42	38
4	77	66	57	51		72	62	55	49		55	49	45		49	44	40		43	39	36	33
5	71	59	50	44		66	55	48	42		49	43	38		44	39	35		38	35	31	29
6	65	53	44	38		61	50	42	37		44	38	34		40	34	31		35	31	28	25
7	60	48	39	34		56	45	38	32		40	34	30		36	31	27		32	28	25	22
8	56	43	35	30		52	41	34	29		37	31	26		33	28	24		29	25	22	20
9	52	40	32	27		49	38	31	26		34	28	24		30	25	22		27	23	20	18
10	49	36	29	24		46	35	28	23		31	25	21		28	23	20		25	21	18	16

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

	0°	45°	90°
0°	18547	18547	18547
5°	18634	18377	18506
10°	18510	18218	18332
15°	18293	18013	18046
20°	18040	17718	17734
25°	17701	17368	17332
30°	17329	16978	16850
35°	16938	16567	16353
40°	16530	16114	15864
45°	16081	15696	15314
50°	15630	15183	14763
55°	15041	14653	14208
60°	14449	14034	13586
65°	13924	13359	12944
70°	13149	12589	12032
75°	12015	11582	11088
80°	10835	10377	10290
85°	9510	9152	8793



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	162.3	2.3
10°-20°	458.3	6.6
20°-30°	677.0	9.7
30°-40°	790.8	11.4
40°-50°	795.1	11.4
50°-60°	698.4	10.0
60°-70°	520.3	7.5
70°-80°	296.4	4.3
80°-90°	87.7	1.3
90°-100°	58.0	0.8
100°-110°	173.6	2.5
110°-120°	295.3	4.2
120°-130°	388.5	5.6
130°-140°	436.7	6.3
140°-150°	429.2	6.2
150°-160°	361.3	5.2
160°-170°	240.5	3.5
170°-180°	84.2	1.2
0°-30°	1297.6	18.7
0°-40°	2088.4	30.0
0°-60°	3581.8	51.5
0°-90°	4486.3	64.5
90°-120°	527.0	7.6
90°-150°	1781.4	25.6
90°-180°	2468.0	35.5
0°-180°	6953.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1723	1723	1723	1723	1723	
5°	1725	1717	1701	1715	1713	163
15°	1642	1635	1616	1627	1619	463
25°	1490	1481	1462	1464	1459	686
35°	1289	1280	1261	1252	1244	806
45°	1056	1050	1031	1014	1006	815
55°	802	799	781	765	757	718
65°	547	539	524	513	508	539
75°	289	283	278	271	267	309
85°	77	74	74	71	71	85
90°	1	8	17	20	21	7
95°	41	46	52	54	55	46
105°	157	159	165	165	166	169
115°	297	299	298	299	298	294
125°	435	437	436	433	430	388
135°	565	568	568	565	564	435
145°	685	686	688	688	685	428
155°	784	784	785	787	783	361
165°	854	852	852	856	851	241
175°	888	886	886	889	885	84
180°	891	891	891	891	891	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1
2.5°	1729.0	1728.0	1726.9	1725.9	1724.8	1722.8	1720.0	1717.0	1714.1	1711.2	1713.8
5°	1724.6	1723.0	1721.3	1719.7	1718.0	1715.3	1711.8	1708.1	1704.5	1700.8	1704.1
7.5°	1707.7	1706.0	1704.4	1702.7	1701.1	1698.4	1694.6	1690.9	1687.2	1683.4	1686.3
10°	1693.5	1691.8	1690.2	1688.5	1686.9	1683.9	1679.6	1675.4	1671.0	1666.8	1669.7
12.5°	1674.5	1673.1	1671.7	1670.4	1669.0	1666.2	1662.3	1658.2	1654.2	1650.2	1652.4
15°	1641.6	1640.3	1639.0	1637.7	1636.3	1633.5	1629.3	1624.9	1620.7	1616.4	1619.0
17.5°	1603.4	1601.7	1600.0	1598.3	1596.5	1593.6	1589.2	1585.0	1580.6	1576.4	1578.3
20°	1574.9	1572.9	1570.9	1569.0	1567.1	1563.9	1559.6	1555.4	1551.0	1546.8	1548.1
22.5°	1542.9	1541.0	1539.0	1537.0	1535.0	1531.9	1527.6	1523.3	1519.1	1514.8	1515.8
25°	1490.4	1488.5	1486.5	1484.5	1482.6	1479.4	1475.2	1470.9	1466.6	1462.4	1462.6
27.5°	1434.5	1432.6	1430.7	1428.7	1426.8	1423.6	1419.0	1414.4	1409.8	1405.1	1405.4
30°	1394.2	1392.5	1390.9	1389.2	1387.6	1384.5	1379.9	1375.3	1370.6	1366.0	1366.0
32.5°	1353.9	1351.7	1349.5	1347.4	1345.2	1342.3	1338.8	1335.2	1331.6	1328.1	1326.3
35°	1289.0	1287.0	1285.1	1283.1	1281.1	1278.0	1273.7	1269.4	1265.1	1260.8	1258.9
37.5°	1222.6	1220.1	1217.6	1215.1	1212.6	1209.2	1204.9	1200.5	1196.2	1191.8	1189.4
40°	1176.4	1174.4	1172.4	1170.4	1168.5	1165.2	1160.6	1155.9	1151.3	1146.8	1144.2
42.5°	1130.1	1127.9	1125.7	1123.4	1121.2	1117.8	1113.1	1108.5	1103.9	1099.4	1096.7
45°	1056.4	1055.1	1053.8	1052.4	1051.1	1048.3	1044.1	1039.7	1035.5	1031.1	1027.3
47.5°	983.2	981.3	979.4	977.4	975.5	972.6	968.6	964.5	960.5	956.5	952.6
50°	933.4	931.8	930.1	928.5	926.8	923.9	919.5	915.3	911.0	906.7	903.1
52.5°	881.3	880.1	879.0	877.9	876.8	873.9	869.4	864.9	860.4	855.7	852.6
55°	801.5	801.3	800.9	800.6	800.2	798.0	793.6	789.4	785.0	780.8	777.2
57.5°	725.7	724.5	723.4	722.4	721.2	719.0	715.5	712.1	708.7	705.2	702.0
60°	671.2	670.8	670.5	670.1	669.9	667.7	663.7	659.8	655.8	651.9	648.9
62.5°	622.5	621.7	620.9	620.0	619.2	616.7	612.7	608.8	604.9	601.0	597.9
65°	546.7	545.1	543.4	541.8	540.1	537.6	534.3	531.0	527.7	524.5	521.9
67.5°	466.4	465.0	463.5	462.0	460.6	458.6	456.1	453.6	451.1	448.7	446.3
70°	417.8	415.8	413.9	411.9	409.9	407.9	406.0	404.0	402.0	400.0	397.8
72.5°	366.8	365.4	363.9	362.5	361.1	359.2	356.9	354.7	352.5	350.2	348.2
75°	288.9	287.6	286.3	284.9	283.6	282.5	281.5	280.5	279.6	278.5	276.9
77.5°	219.9	219.1	218.4	217.7	217.0	216.0	214.8	213.7	212.4	211.3	210.2
80°	174.8	173.8	172.9	171.8	170.9	170.0	169.4	168.7	168.1	167.4	167.1
82.5°	131.0	130.7	130.5	130.4	130.2	130.0	129.9	129.8	129.6	129.5	128.9
85°	77.0	76.3	75.7	75.0	74.4	74.1	74.1	74.1	74.1	74.1	73.4
87.5°	30.9	30.4	30.0	29.5	29.0	28.8	29.0	29.1	29.3	29.4	29.3
90°	0.7	2.3	3.8	5.4	6.9	8.7	10.7	12.7	14.8	16.8	17.4
92.5°	17.0	18.0	19.0	20.1	21.1	22.2	23.4	24.6	25.7	26.9	27.3
95°	41.3	42.3	43.5	44.6	45.6	46.8	48.1	49.3	50.5	51.7	52.4
97.5°	73.3	74.1	74.9	75.8	76.5	77.4	78.3	79.2	80.1	81.1	81.7
100°	95.1	96.0	97.0	97.9	98.9	99.7	100.5	101.3	102.1	102.8	103.3
102.5°	120.4	120.9	121.5	122.0	122.5	123.4	124.4	125.5	126.4	127.4	127.9
105°	157.4	157.7	158.1	158.3	158.6	159.5	160.9	162.3	163.7	165.1	165.1
107.5°	200.5	200.7	200.9	201.0	201.2	201.6	202.2	202.7	203.3	203.9	204.3
110°	227.3	227.7	228.0	228.3	228.6	228.9	229.2	229.5	229.9	230.2	230.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	255.3	255.5	255.7	255.9	256.1	256.2	256.3	256.4	256.4	256.5	257.2
115°	297.4	297.7	298.2	298.7	299.2	299.3	299.0	298.7	298.3	298.0	298.2
117.5°	339.6	339.9	340.2	340.5	340.8	340.8	340.4	340.0	339.6	339.1	339.1
120°	365.9	366.8	367.8	368.7	369.7	369.7	368.9	368.2	367.4	366.6	366.5
122.5°	393.3	394.0	394.6	395.4	396.1	396.2	395.8	395.4	395.0	394.5	394.2
125°	435.2	435.6	436.1	436.6	437.1	437.1	436.8	436.5	436.1	435.8	435.3
127.5°	473.7	474.8	475.8	476.7	477.8	478.1	477.8	477.4	477.0	476.7	475.8
130°	499.5	500.8	502.0	503.2	504.4	504.9	504.4	504.0	503.5	503.0	502.4
132.5°	525.3	526.5	527.7	529.0	530.3	530.7	530.4	530.0	529.6	529.3	528.6
135°	564.6	565.5	566.5	567.4	568.3	568.7	568.5	568.4	568.3	568.1	567.4
137.5°	601.0	601.7	602.5	603.3	604.1	604.6	605.0	605.5	605.9	606.2	605.6
140°	626.1	626.9	627.7	628.5	629.2	629.7	629.9	630.0	630.2	630.4	630.2
142.5°	649.1	649.9	650.6	651.4	652.1	652.7	653.0	653.3	653.6	653.8	653.7
145°	684.9	685.2	685.5	685.8	686.2	686.5	687.0	687.5	688.0	688.4	688.2
147.5°	716.2	716.8	717.4	717.9	718.5	719.0	719.4	719.8	720.3	720.8	720.8
150°	738.1	738.4	738.7	739.0	739.3	739.6	739.9	740.3	740.6	740.8	740.8
152.5°	756.0	756.4	756.9	757.3	757.7	758.0	758.2	758.4	758.6	758.7	759.0
155°	784.3	784.3	784.3	784.3	784.3	784.3	784.5	784.7	784.8	784.9	785.6
157.5°	808.3	808.1	807.9	807.8	807.6	807.6	807.7	807.8	807.9	808.0	808.7
160°	823.4	823.1	822.8	822.5	822.2	822.0	822.0	822.0	822.0	822.0	822.8
162.5°	836.9	836.4	835.9	835.6	835.1	835.0	835.1	835.2	835.4	835.5	836.2
165°	854.2	853.8	853.3	852.8	852.3	852.1	852.1	852.1	852.1	852.1	853.0
167.5°	868.1	867.4	866.9	866.2	865.5	865.3	865.4	865.5	865.7	865.8	866.8
170°	875.9	875.2	874.7	874.0	873.4	873.1	873.1	873.1	873.1	873.1	874.2
172.5°	882.0	881.5	880.8	880.1	879.6	879.2	879.2	879.2	879.2	879.2	880.2
175°	888.4	887.9	887.2	886.6	886.0	885.7	885.7	885.7	885.7	885.7	886.6
177.5°	891.2	890.6	890.1	889.7	889.2	888.9	888.9	888.9	888.9	888.9	889.7
180°	890.6	890.6	890.6	890.6	890.6	890.6	890.6	890.6	890.6	890.6	890.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1	1723.1
2.5°	1716.5	1719.1	1721.7	1723.0	1722.7	1722.4	1722.1	1721.9
5°	1707.4	1710.7	1714.0	1715.3	1714.7	1714.0	1713.4	1712.7
7.5°	1689.3	1692.2	1695.3	1696.5	1696.1	1695.7	1695.4	1695.0
10°	1672.7	1675.7	1678.7	1679.8	1679.1	1678.5	1677.8	1677.2
12.5°	1654.5	1656.7	1658.9	1659.8	1659.3	1659.0	1658.6	1658.2
15°	1621.6	1624.3	1626.9	1627.3	1625.3	1623.3	1621.4	1619.4
17.5°	1580.1	1582.0	1583.8	1584.3	1583.7	1582.9	1582.2	1581.5
20°	1549.4	1550.8	1552.1	1552.2	1551.2	1550.2	1549.3	1548.2
22.5°	1516.9	1518.0	1519.0	1518.9	1517.7	1516.4	1515.1	1513.9
25°	1463.0	1463.3	1463.7	1463.3	1462.4	1461.3	1460.4	1459.3
27.5°	1405.7	1405.9	1406.2	1405.7	1404.5	1403.2	1401.9	1400.7
30°	1366.0	1366.0	1366.0	1364.9	1362.5	1360.3	1357.9	1355.7
32.5°	1324.4	1322.6	1320.7	1319.2	1318.0	1316.6	1315.4	1314.2
35°	1256.9	1254.9	1252.9	1251.1	1249.4	1247.8	1246.1	1244.5
37.5°	1187.0	1184.7	1182.3	1180.6	1179.5	1178.5	1177.4	1176.4
40°	1141.5	1138.9	1136.2	1134.3	1132.9	1131.6	1130.3	1129.0
42.5°	1094.1	1091.5	1088.8	1086.8	1085.5	1084.2	1082.9	1081.6
45°	1023.3	1019.4	1015.4	1012.6	1011.0	1009.3	1007.7	1006.0
47.5°	948.8	944.9	940.9	938.3	936.9	935.4	934.0	932.6
50°	899.5	895.9	892.2	889.5	887.5	885.5	883.5	881.6
52.5°	849.6	846.5	843.4	840.8	838.9	836.9	834.9	832.9
55°	773.5	770.0	766.3	763.6	762.0	760.3	758.7	757.1
57.5°	698.8	695.6	692.3	689.8	687.9	686.0	684.0	682.1
60°	646.0	643.0	640.1	637.7	636.1	634.4	632.8	631.1
62.5°	595.0	592.0	589.1	587.0	585.9	584.8	583.7	582.6
65°	519.2	516.6	514.0	512.2	511.1	510.2	509.2	508.2
67.5°	444.0	441.7	439.4	437.5	436.2	434.8	433.4	432.1
70°	395.4	393.1	390.8	388.8	387.2	385.5	383.9	382.3
72.5°	346.2	344.1	342.0	340.6	339.8	338.9	338.1	337.2
75°	275.2	273.6	271.9	270.6	269.7	268.6	267.7	266.6
77.5°	209.1	207.9	206.8	206.2	206.2	206.2	206.2	206.2
80°	166.7	166.5	166.1	166.0	166.0	166.0	166.0	166.0
82.5°	128.3	127.7	127.1	126.7	126.4	126.2	125.9	125.6
85°	72.8	72.1	71.4	71.2	71.2	71.2	71.2	71.2
87.5°	29.1	29.0	28.8	28.8	28.9	28.9	29.0	29.1
90°	18.0	18.7	19.3	19.7	20.1	20.4	20.6	21.0
92.5°	27.9	28.4	28.8	29.0	28.8	28.7	28.5	28.3
95°	53.0	53.6	54.3	54.6	54.6	54.6	54.6	54.6
97.5°	82.5	83.1	83.9	84.2	84.2	84.1	84.0	84.0
100°	103.8	104.2	104.7	105.1	105.4	105.8	106.0	106.3
102.5°	128.4	128.8	129.3	129.5	129.5	129.4	129.3	129.3
105°	165.1	165.1	165.1	165.2	165.6	165.9	166.2	166.5
107.5°	204.8	205.4	205.9	206.0	205.9	205.7	205.5	205.3
110°	231.4	232.1	232.6	232.8	232.5	232.1	231.9	231.6





TEST NUMBER: P332221-830

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	258.0	258.7	259.5	259.8	259.8	259.7	259.6	259.6
115°	298.3	298.5	298.7	298.7	298.5	298.3	298.2	298.0
117.5°	339.1	339.0	339.0	338.8	338.4	337.9	337.5	337.1
120°	366.3	366.1	366.0	365.7	365.4	365.1	364.8	364.5
122.5°	393.8	393.3	392.9	392.6	392.1	391.6	391.2	390.8
125°	434.6	433.9	433.4	432.7	432.2	431.5	430.8	430.3
127.5°	474.9	474.1	473.3	472.4	471.7	471.0	470.3	469.6
130°	501.8	501.1	500.5	499.6	498.6	497.5	496.4	495.3
132.5°	527.8	527.1	526.3	525.6	524.7	523.9	523.0	522.2
135°	566.8	566.2	565.6	565.1	564.8	564.5	564.2	563.8
137.5°	604.9	604.3	603.7	603.0	602.5	601.8	601.2	600.7
140°	630.0	629.9	629.7	629.1	628.0	626.9	625.8	624.7
142.5°	653.6	653.4	653.2	652.7	651.9	651.0	650.2	649.3
145°	688.1	688.0	687.8	687.4	686.7	686.2	685.5	684.9
147.5°	720.8	720.8	720.8	720.3	719.3	718.4	717.5	716.5
150°	740.8	740.8	740.8	740.4	739.4	738.6	737.6	736.7
152.5°	759.3	759.5	759.8	759.5	758.7	757.9	757.1	756.3
155°	786.2	786.8	787.4	787.2	786.1	785.0	783.9	782.9
157.5°	809.4	810.0	810.7	810.5	809.6	808.8	807.9	807.0
160°	823.6	824.3	825.1	825.2	824.6	824.0	823.3	822.7
162.5°	837.0	837.8	838.6	838.5	837.4	836.5	835.5	834.4
165°	853.9	854.9	855.8	855.7	854.7	853.6	852.5	851.4
167.5°	867.7	868.7	869.7	869.7	868.7	867.7	866.8	865.8
170°	875.2	876.4	877.4	877.4	876.4	875.2	874.2	873.1
172.5°	881.2	882.1	883.1	883.1	881.9	880.9	879.8	878.7
175°	887.6	888.4	889.4	889.4	888.3	887.1	886.1	885.0
177.5°	890.4	891.2	891.9	891.8	891.0	890.0	889.2	888.3
180°	890.6	890.6	890.6	890.6	890.6	890.6	890.6	890.6

(END OF REPORT)