

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: P332232-830

Luminaire Tested: **S123DIW-S1165D1320U830-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332232-830
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-S1165D1320U830-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9462.8 lumens
Efficiency: N/A
Efficacy: 124.2 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: General Diffuse

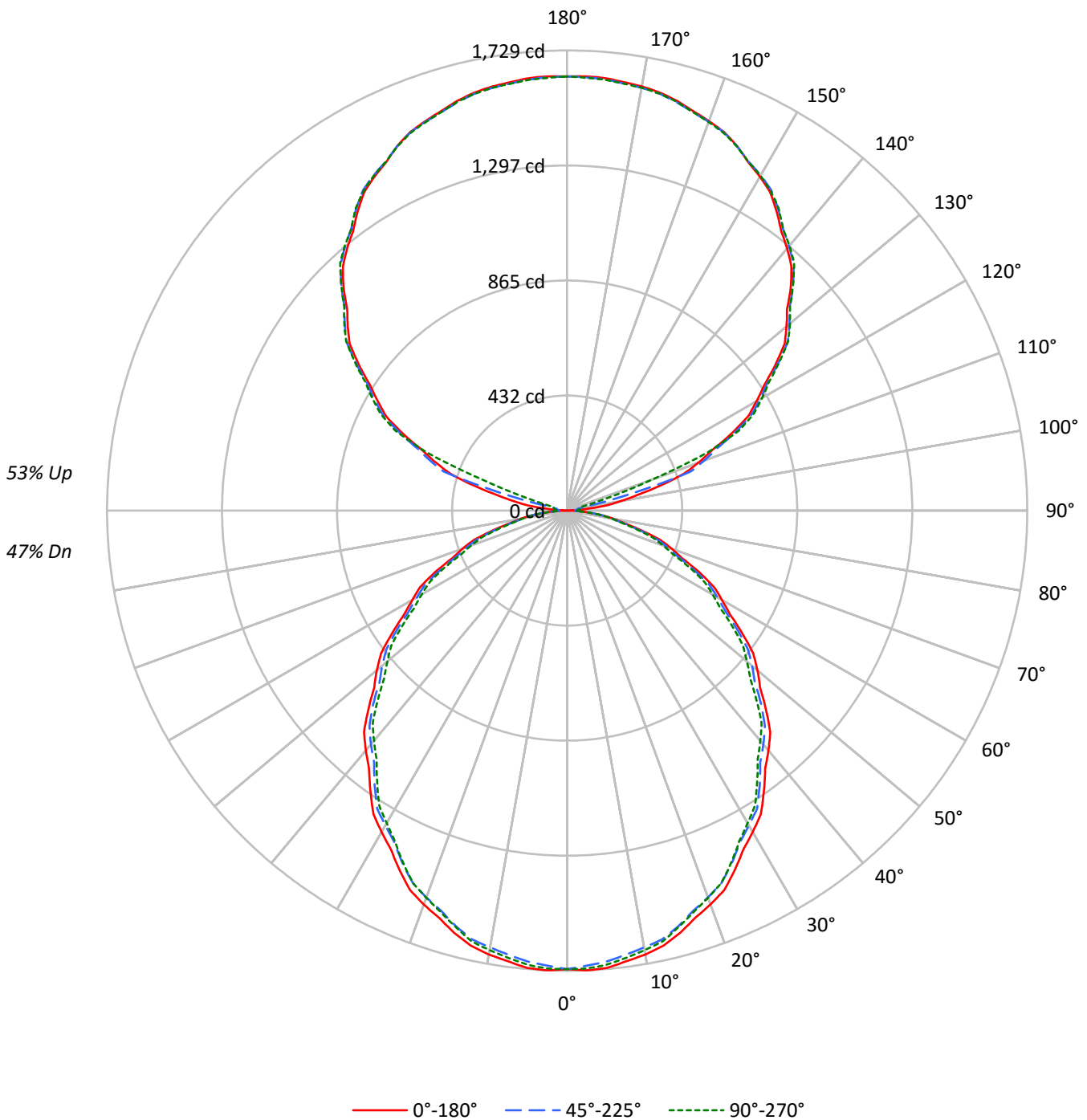
Input Watts (W): 76.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	107	107	107	107	98	98	98	98	82	82	82	67	67	67	54	54	54	47	47	47	47	47	47	47		
1	97	93	89	85	89	85	82	79	72	69	67	59	57	56	47	46	45	40	40	40	40	40	40	40		
2	88	81	75	70	81	75	69	65	63	59	55	52	49	47	42	40	38	33	33	33	33	33	33	33		
3	81	71	64	58	74	66	59	54	55	51	47	46	42	39	37	34	32	28	28	28	28	28	28	28		
4	74	63	55	49	67	58	51	46	49	44	40	41	37	34	33	30	28	24	24	24	24	24	24	24		
5	68	56	48	42	62	52	45	39	44	38	34	37	32	29	30	27	24	21	21	21	21	21	21	21		
6	62	50	42	36	57	47	39	34	40	34	30	33	29	26	27	24	21	18	18	18	18	18	18	18		
7	58	45	37	32	53	42	35	30	36	30	26	30	26	23	25	21	19	16	16	16	16	16	16	16		
8	53	41	33	28	49	38	31	26	33	27	23	27	23	20	23	19	17	15	15	15	15	15	15	15		
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15	13	13	13	13	13	13	13		
10	46	34	27	22	43	32	26	21	28	22	19	23	19	16	19	16	14	12	12	12	12	12	12	12		

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	1.7
10°-20°	458.3	4.8
20°-30°	677.0	7.2
30°-40°	790.8	8.4
40°-50°	795.1	8.4
50°-60°	698.4	7.4
60°-70°	520.3	5.5
70°-80°	296.4	3.1
80°-90°	89.7	0.9
90°-100°	59.3	0.6
100°-110°	282.7	3.0
110°-120°	679.0	7.2
120°-130°	864.6	9.1
130°-140°	923.8	9.8
140°-150°	863.8	9.1
150°-160°	696.8	7.4
160°-170°	449.7	4.8
170°-180°	155.0	1.6
0°-30°	1297.6	13.7
0°-40°	2088.4	22.1
0°-60°	3581.8	37.9
0°-90°	4488.2	47.4
90°-120°	1020.9	10.8
90°-150°	3673.1	38.8
90°-180°	4975.0	52.6
0°-180°	9462.8	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	14	29	34	36	8
95°	74	28	38	46	46	91
105°	361	368	265	63	53	383
115°	678	685	696	707	713	669
125°	955	964	970	972	974	853
135°	1189	1196	1201	1204	1201	915
145°	1372	1380	1383	1385	1385	858
155°	1511	1509	1510	1515	1509	696
165°	1594	1590	1589	1598	1590	450
175°	1631	1626	1626	1634	1625	155
180°	1631	1631	1631	1631	1631	



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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°	31.1	30.8	30.5	30.3	30.1	30.2	30.5	31.0	31.5	31.9	31.9
90°	1.2	3.9	6.6	9.3	12.0	15.1	18.6	22.1	25.5	29.1	30.2
92.5°	22.5	21.8	21.0	20.3	19.5	20.5	23.1	25.7	28.4	31.0	32.7
95°	73.9	62.9	51.8	40.8	29.8	25.7	28.7	31.7	34.6	37.6	39.5
97.5°	148.5	143.6	138.6	133.7	128.8	116.6	97.2	77.9	58.4	39.0	41.2
100°	204.8	210.2	215.6	220.9	226.4	208.0	166.1	124.0	82.0	40.0	42.1
102.5°	268.8	272.7	276.5	280.4	284.4	263.3	217.4	171.5	125.6	79.7	73.0
105°	361.2	364.1	367.1	370.0	373.0	362.4	338.1	313.9	289.6	265.4	217.7
107.5°	458.6	461.0	463.4	465.7	468.1	471.2	475.0	478.8	482.7	486.4	451.5
110°	523.6	525.8	527.8	530.0	532.2	534.7	537.7	540.6	543.7	546.6	537.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	585.6	587.6	589.5	591.4	593.3	595.8	598.8	601.7	604.7	607.7	607.8
115°	677.5	679.1	680.7	682.3	683.9	686.0	688.3	690.8	693.2	695.7	698.3
117.5°	766.5	768.5	770.4	772.4	774.4	776.0	777.2	778.5	779.8	781.0	783.2
120°	821.7	824.2	826.5	829.0	831.4	833.0	833.8	834.6	835.5	836.2	838.4
122.5°	878.0	880.0	881.9	883.9	885.9	887.4	888.4	889.5	890.5	891.6	893.1
125°	955.0	957.2	959.3	961.5	963.7	965.3	966.3	967.4	968.5	969.6	970.1
127.5°	1029.6	1031.8	1034.0	1036.1	1038.3	1040.0	1041.3	1042.6	1043.9	1045.2	1046.0
130°	1076.2	1078.4	1080.5	1082.7	1084.9	1086.5	1087.5	1088.6	1089.7	1090.7	1091.8
132.5°	1120.8	1122.9	1125.1	1127.3	1129.4	1131.0	1131.8	1132.7	1133.5	1134.3	1135.5
135°	1188.9	1190.5	1192.1	1193.7	1195.4	1196.7	1197.8	1198.9	1200.0	1201.1	1201.8
137.5°	1247.1	1249.2	1251.2	1253.2	1255.3	1256.6	1257.2	1257.8	1258.4	1259.0	1260.3
140°	1285.9	1287.5	1289.1	1290.7	1292.3	1293.5	1294.4	1295.1	1296.0	1296.8	1297.9
142.5°	1321.7	1323.3	1325.0	1326.6	1328.2	1329.5	1330.2	1331.1	1331.8	1332.7	1333.5
145°	1372.0	1373.9	1375.7	1377.6	1379.5	1380.6	1381.2	1381.8	1382.3	1382.8	1383.4
147.5°	1419.2	1420.4	1421.6	1422.9	1424.2	1425.0	1425.6	1426.1	1426.6	1427.2	1427.8
150°	1448.3	1449.1	1449.9	1450.7	1451.5	1452.2	1452.7	1453.2	1453.8	1454.3	1454.9
152.5°	1474.4	1474.8	1475.2	1475.6	1475.9	1476.3	1476.7	1477.0	1477.2	1477.6	1478.6
155°	1511.3	1510.8	1510.2	1509.7	1509.1	1509.0	1509.3	1509.6	1509.9	1510.0	1511.5
157.5°	1539.9	1539.8	1539.8	1539.7	1539.6	1539.5	1539.3	1539.0	1538.7	1538.4	1540.0
160°	1557.4	1557.1	1556.8	1556.5	1556.2	1556.0	1555.8	1555.5	1555.2	1554.9	1556.5
162.5°	1573.9	1573.1	1572.4	1571.7	1571.0	1570.6	1570.3	1570.0	1569.7	1569.4	1571.3
165°	1593.7	1592.9	1592.0	1591.3	1590.4	1590.0	1589.7	1589.4	1589.1	1588.8	1591.0
167.5°	1609.2	1608.2	1607.0	1606.0	1604.9	1604.4	1604.4	1604.4	1604.4	1604.4	1606.6
170°	1618.0	1616.8	1615.8	1614.8	1613.6	1613.1	1613.1	1613.1	1613.1	1613.1	1615.2
172.5°	1623.8	1622.5	1621.2	1619.9	1618.6	1618.1	1618.3	1618.5	1618.7	1618.9	1621.1
175°	1631.3	1629.9	1628.6	1627.2	1625.9	1625.3	1625.6	1625.9	1626.2	1626.5	1628.3
177.5°	1633.2	1632.1	1631.1	1630.0	1628.9	1628.5	1628.7	1628.9	1629.1	1629.4	1631.1
180°	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3



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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°	31.8	31.8	31.7	31.8	31.9	32.0	32.0	32.1
90°	31.2	32.3	33.4	34.2	34.8	35.3	35.8	36.4
92.5°	34.5	36.2	37.9	38.9	39.3	39.6	39.9	40.2
95°	41.4	43.3	45.1	46.1	46.1	46.1	46.1	46.1
97.5°	43.4	45.5	47.6	48.8	49.1	49.4	49.7	50.0
100°	44.3	46.5	48.6	49.9	50.0	50.3	50.6	50.9
102.5°	66.4	59.7	53.1	50.0	50.4	50.9	51.4	51.8
105°	170.0	122.4	74.7	51.2	51.7	52.2	52.8	53.3
107.5°	416.6	381.6	346.7	311.2	275.3	239.3	203.4	167.5
110°	528.8	519.9	511.0	487.3	448.8	410.3	371.8	333.3



TEST NUMBER: P332232-830

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	608.0	608.1	608.3	604.4	596.2	588.1	579.9	571.8
115°	701.1	703.7	706.4	708.3	709.4	710.5	711.5	712.7
117.5°	785.3	787.4	789.6	790.8	791.0	791.2	791.5	791.6
120°	840.6	842.7	844.9	845.9	845.9	845.9	845.9	845.9
122.5°	894.6	896.1	897.6	898.4	898.6	898.8	899.1	899.3
125°	970.6	971.2	971.7	972.2	972.8	973.4	973.8	974.4
127.5°	1046.9	1047.7	1048.7	1048.8	1048.3	1047.7	1047.2	1046.6
130°	1092.9	1094.0	1095.0	1095.3	1094.8	1094.3	1093.7	1093.2
132.5°	1136.5	1137.6	1138.7	1138.9	1138.1	1137.4	1136.6	1135.9
135°	1202.7	1203.4	1204.3	1204.3	1203.4	1202.7	1201.8	1201.1
137.5°	1261.6	1262.8	1264.1	1264.5	1263.9	1263.5	1262.9	1262.3
140°	1298.9	1300.0	1301.1	1301.4	1300.8	1300.2	1299.8	1299.2
142.5°	1334.4	1335.2	1336.1	1336.1	1335.4	1334.6	1333.9	1333.1
145°	1383.9	1384.4	1385.0	1385.3	1385.3	1385.3	1385.3	1385.3
147.5°	1428.2	1428.8	1429.4	1429.0	1427.8	1426.5	1425.3	1424.0
150°	1455.4	1455.9	1456.5	1456.3	1455.6	1454.7	1454.0	1453.1
152.5°	1479.5	1480.5	1481.5	1481.4	1480.1	1478.8	1477.6	1476.4
155°	1512.8	1514.1	1515.5	1515.3	1513.7	1512.1	1510.5	1508.9
157.5°	1541.7	1543.3	1544.9	1544.6	1542.6	1540.5	1538.3	1536.3
160°	1558.1	1559.8	1561.4	1561.2	1559.3	1557.5	1555.6	1553.7
162.5°	1573.1	1575.0	1576.8	1576.9	1575.2	1573.6	1571.9	1570.2
165°	1593.2	1595.3	1597.5	1597.6	1595.7	1593.8	1592.0	1590.1
167.5°	1608.7	1610.8	1613.0	1613.0	1610.8	1608.7	1606.6	1604.4
170°	1617.4	1619.6	1621.7	1621.7	1619.6	1617.4	1615.2	1613.1
172.5°	1623.2	1625.4	1627.6	1627.4	1625.0	1622.7	1620.3	1618.0
175°	1630.2	1632.1	1634.0	1633.8	1631.7	1629.6	1627.4	1625.2
177.5°	1632.8	1634.6	1636.3	1636.1	1633.9	1631.7	1629.6	1627.4
180°	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3	1631.3

(END OF REPORT)