

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: P332238-930

Luminaire Tested: **S123DIW-S1165D1535U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332238-930
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-S1165D1535U930-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8886.0 lumens
Efficiency: N/A
Efficacy: 107.2 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

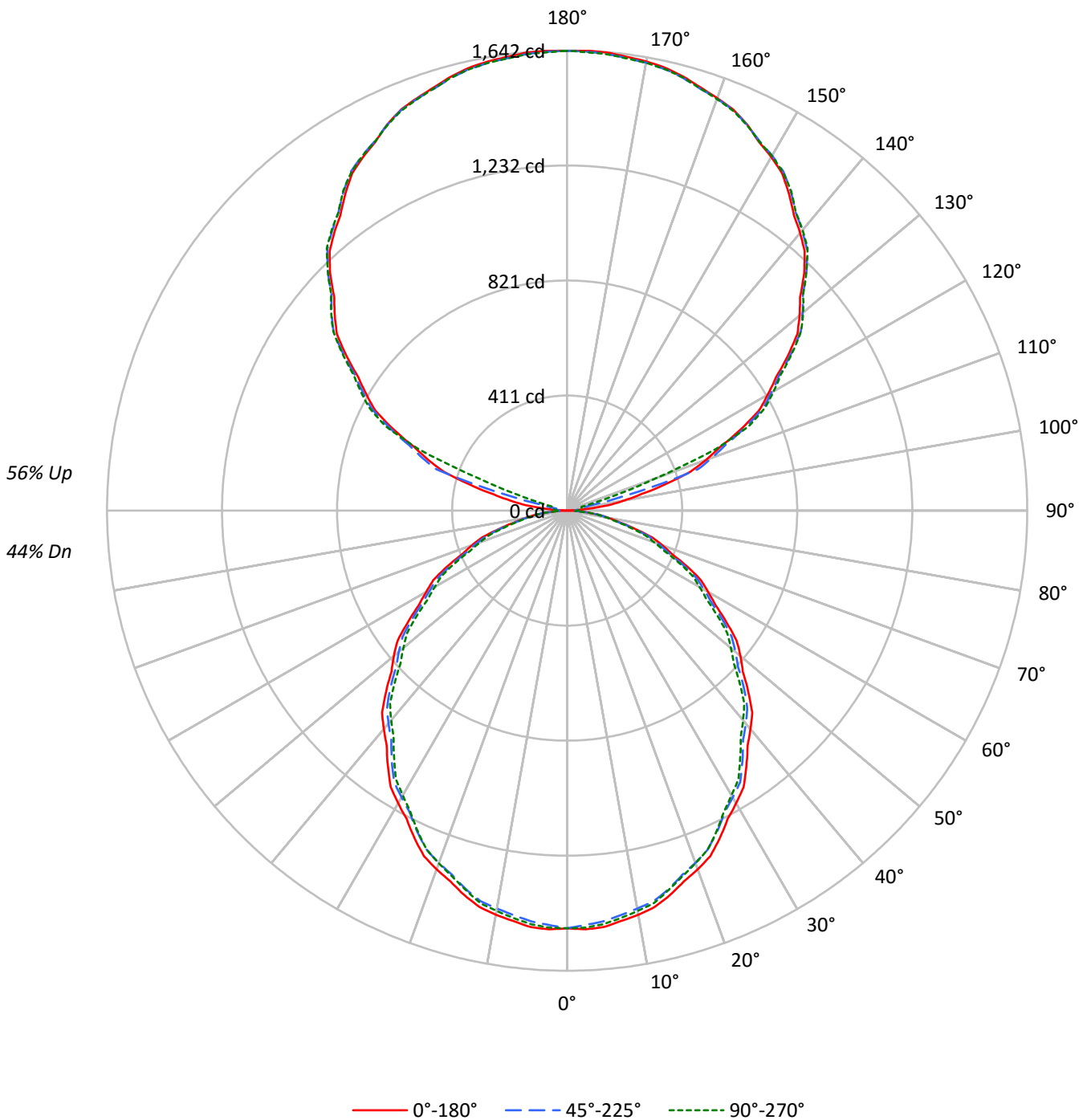
Input Watts (W): 82.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	44
1	96	92	88	85	88	84	81	78	70	68	65	57	55	54	44	43	42	37
2	88	80	74	69	80	74	68	64	61	57	54	50	47	45	39	37	36	31
3	80	71	63	57	73	65	58	53	54	49	45	44	41	38	35	32	30	26
4	73	62	55	49	67	57	50	45	48	43	39	39	35	32	31	28	26	22
5	67	56	47	41	61	51	44	39	43	37	33	35	31	28	28	25	23	19
6	62	50	42	36	56	46	39	34	38	33	29	32	28	24	25	22	20	17
7	57	45	37	31	52	41	34	29	35	29	25	29	25	22	23	20	18	15
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16	13
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14	12
10	46	34	27	22	42	31	25	21	27	22	18	22	18	16	18	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	16043	16043	16043
5°	16119	15896	16008
10°	16010	15759	15856
15°	15824	15581	15610
20°	15605	15326	15340
25°	15311	15023	14992
30°	14989	14686	14574
35°	14651	14331	14146
40°	14299	13939	13722
45°	13910	13577	13247
50°	13520	13134	12769
55°	13011	12675	12288
60°	12499	12140	11752
65°	12045	11556	11196
70°	11374	10889	10408
75°	10393	10019	9590
80°	9372	8976	8901
85°	8225	7916	7608



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.4	1.6
10°-20°	396.4	4.5
20°-30°	585.6	6.6
30°-40°	684.0	7.7
40°-50°	687.7	7.7
50°-60°	604.1	6.8
60°-70°	450.0	5.1
70°-80°	256.4	2.9
80°-90°	78.2	0.9
90°-100°	59.6	0.7
100°-110°	284.3	3.2
110°-120°	682.8	7.7
120°-130°	869.5	9.8
130°-140°	929.1	10.5
140°-150°	868.8	9.8
150°-160°	700.8	7.9
160°-170°	452.3	5.1
170°-180°	155.9	1.8
0°-30°	1122.4	12.6
0°-40°	1806.5	20.3
0°-60°	3098.3	34.9
0°-90°	3882.9	43.7
90°-120°	1026.8	11.6
90°-150°	3694.1	41.6
90°-180°	5003.0	56.3
0°-180°	8886.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1490	1490	1490	1490	1490	
5°	1492	1485	1471	1483	1482	141
15°	1420	1414	1398	1407	1401	400
25°	1289	1281	1265	1266	1262	594
35°	1115	1107	1091	1083	1076	697
45°	914	908	892	877	870	705
55°	693	691	675	662	655	621
65°	473	466	454	444	440	466
75°	250	245	241	235	231	267
85°	67	64	64	62	62	73
90°	1	14	29	34	36	7
95°	74	28	38	46	46	92
105°	363	370	267	63	54	385
115°	681	689	700	711	717	672
125°	960	970	975	978	980	857
135°	1196	1203	1208	1211	1208	920
145°	1380	1388	1391	1393	1393	863
155°	1520	1518	1519	1524	1518	700
165°	1603	1599	1598	1607	1599	453
175°	1640	1635	1636	1643	1634	156
180°	1640	1640	1640	1640	1640	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4
2.5°	1495.6	1494.7	1493.8	1492.9	1491.9	1490.2	1487.8	1485.2	1482.7	1480.2	1482.5
5°	1491.8	1490.4	1488.9	1487.5	1486.0	1483.8	1480.7	1477.5	1474.4	1471.2	1474.1
7.5°	1477.2	1475.7	1474.3	1472.8	1471.5	1469.1	1465.8	1462.6	1459.4	1456.1	1458.7
10°	1464.8	1463.4	1462.0	1460.5	1459.1	1456.6	1452.9	1449.2	1445.4	1441.8	1444.3
12.5°	1448.5	1447.2	1446.0	1444.9	1443.7	1441.3	1437.9	1434.4	1430.9	1427.4	1429.3
15°	1420.0	1418.9	1417.7	1416.6	1415.4	1413.0	1409.3	1405.6	1401.9	1398.2	1400.4
17.5°	1386.9	1385.4	1384.0	1382.5	1381.0	1378.4	1374.7	1371.0	1367.3	1363.6	1365.2
20°	1362.3	1360.6	1358.9	1357.1	1355.5	1352.7	1349.1	1345.4	1341.7	1338.0	1339.1
22.5°	1334.6	1332.9	1331.2	1329.5	1327.8	1325.1	1321.4	1317.7	1314.0	1310.3	1311.2
25°	1289.2	1287.5	1285.8	1284.1	1282.5	1279.7	1276.0	1272.4	1268.6	1264.9	1265.2
27.5°	1240.8	1239.2	1237.5	1235.8	1234.2	1231.4	1227.4	1223.4	1219.4	1215.4	1215.7
30°	1206.0	1204.5	1203.1	1201.7	1200.3	1197.6	1193.6	1189.6	1185.6	1181.6	1181.6
32.5°	1171.1	1169.2	1167.3	1165.5	1163.6	1161.1	1158.1	1155.0	1151.9	1148.8	1147.2
35°	1115.0	1113.3	1111.6	1109.9	1108.2	1105.5	1101.7	1098.0	1094.3	1090.6	1088.9
37.5°	1057.5	1055.4	1053.2	1051.1	1048.9	1045.9	1042.2	1038.4	1034.7	1030.9	1028.8
40°	1017.6	1015.9	1014.2	1012.4	1010.7	1007.9	1003.9	999.9	995.9	992.0	989.7
42.5°	977.5	975.7	973.7	971.8	969.8	966.9	962.9	958.9	954.9	951.0	948.7
45°	913.8	912.6	911.5	910.4	909.2	906.8	903.1	899.4	895.7	891.9	888.6
47.5°	850.4	848.8	847.2	845.5	843.8	841.3	837.8	834.3	830.9	827.4	824.0
50°	807.4	806.0	804.5	803.2	801.7	799.2	795.4	791.7	788.0	784.3	781.2
52.5°	762.3	761.3	760.3	759.4	758.4	755.9	752.0	748.1	744.2	740.2	737.5
55°	693.3	693.1	692.8	692.5	692.2	690.2	686.5	682.8	679.1	675.4	672.3
57.5°	627.7	626.7	625.7	624.8	623.9	621.9	618.9	616.0	613.0	610.0	607.2
60°	580.6	580.2	580.0	579.7	579.4	577.6	574.1	570.7	567.3	563.9	561.3
62.5°	538.5	537.8	537.0	536.3	535.6	533.5	530.0	526.6	523.3	519.8	517.2
65°	472.9	471.5	470.0	468.6	467.2	465.0	462.2	459.3	456.5	453.7	451.4
67.5°	403.4	402.2	401.0	399.7	398.4	396.7	394.5	392.4	390.2	388.1	386.0
70°	361.4	359.7	358.0	356.3	354.6	352.9	351.1	349.4	347.7	346.0	344.1
72.5°	317.3	316.1	314.8	313.6	312.3	310.7	308.8	306.8	304.9	303.0	301.2
75°	249.9	248.7	247.6	246.5	245.3	244.3	243.5	242.6	241.8	240.9	239.5
77.5°	190.2	189.6	188.9	188.3	187.7	186.9	185.8	184.8	183.8	182.8	181.8
80°	151.2	150.3	149.5	148.6	147.8	147.1	146.5	145.9	145.4	144.8	144.6
82.5°	113.3	113.1	112.9	112.8	112.6	112.4	112.3	112.3	112.1	112.0	111.5
85°	66.6	66.0	65.5	64.9	64.3	64.1	64.1	64.1	64.1	64.1	63.5
87.5°	26.9	26.7	26.6	26.5	26.3	26.5	27.0	27.5	28.0	28.4	28.4
90°	1.2	3.9	6.6	9.4	12.1	15.2	18.7	22.2	25.8	29.3	30.3
92.5°	22.7	21.9	21.1	20.4	19.6	20.5	23.2	25.9	28.5	31.2	32.9
95°	74.4	63.3	52.2	41.0	29.9	25.8	28.9	31.8	34.8	37.7	39.7
97.5°	149.4	144.5	139.5	134.4	129.5	117.2	97.8	78.3	58.8	39.2	41.4
100°	206.0	211.4	216.8	222.3	227.6	209.2	167.0	124.7	82.5	40.2	42.4
102.5°	270.4	274.3	278.2	282.0	285.9	264.8	218.7	172.5	126.4	80.2	73.5
105°	363.2	366.2	369.2	372.2	375.1	364.4	340.1	315.7	291.3	266.9	219.0
107.5°	461.2	463.6	465.9	468.4	470.8	473.9	477.7	481.6	485.4	489.3	454.1
110°	526.5	528.7	530.8	533.0	535.2	537.8	540.8	543.7	546.7	549.7	540.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	589.0	590.9	592.9	594.8	596.7	599.2	602.2	605.2	608.1	611.1	611.3
115°	681.3	683.0	684.6	686.2	687.9	689.9	692.4	694.7	697.2	699.6	702.3
117.5°	770.8	772.8	774.8	776.8	778.9	780.5	781.7	782.9	784.2	785.5	787.6
120°	826.4	828.8	831.3	833.7	836.2	837.8	838.5	839.4	840.2	841.0	843.2
122.5°	883.0	884.9	887.0	888.9	891.0	892.5	893.5	894.5	895.5	896.6	898.1
125°	960.4	962.6	964.8	966.9	969.1	970.8	971.8	972.9	974.0	975.1	975.7
127.5°	1035.5	1037.7	1039.9	1042.0	1044.2	1045.9	1047.3	1048.6	1049.9	1051.2	1052.0
130°	1082.3	1084.5	1086.7	1088.8	1091.0	1092.7	1093.7	1094.8	1095.9	1097.0	1098.0
132.5°	1127.2	1129.4	1131.6	1133.7	1135.9	1137.4	1138.2	1139.1	1140.0	1140.8	1141.9
135°	1195.7	1197.3	1199.0	1200.6	1202.2	1203.5	1204.6	1205.7	1206.8	1207.9	1208.7
137.5°	1254.2	1256.3	1258.3	1260.4	1262.4	1263.8	1264.4	1264.9	1265.6	1266.2	1267.5
140°	1293.2	1294.9	1296.5	1298.1	1299.8	1300.9	1301.7	1302.5	1303.3	1304.2	1305.3
142.5°	1329.3	1330.9	1332.5	1334.2	1335.8	1337.0	1337.8	1338.6	1339.5	1340.3	1341.1
145°	1379.7	1381.6	1383.6	1385.4	1387.3	1388.5	1389.1	1389.6	1390.2	1390.7	1391.2
147.5°	1427.3	1428.6	1429.8	1431.0	1432.2	1433.1	1433.7	1434.3	1434.8	1435.3	1435.9
150°	1456.5	1457.3	1458.2	1459.0	1459.8	1460.4	1461.0	1461.6	1462.1	1462.6	1463.1
152.5°	1482.9	1483.3	1483.6	1484.0	1484.4	1484.7	1485.1	1485.4	1485.7	1486.0	1487.0
155°	1519.9	1519.4	1518.8	1518.3	1517.8	1517.6	1517.9	1518.2	1518.4	1518.7	1520.0
157.5°	1548.7	1548.7	1548.6	1548.5	1548.5	1548.3	1548.0	1547.8	1547.5	1547.2	1548.8
160°	1566.3	1565.9	1565.7	1565.5	1565.1	1564.9	1564.6	1564.3	1564.1	1563.8	1565.5
162.5°	1582.8	1582.1	1581.4	1580.7	1580.0	1579.5	1579.2	1579.0	1578.7	1578.4	1580.3
165°	1602.8	1602.0	1601.2	1600.4	1599.5	1599.0	1598.7	1598.5	1598.2	1597.9	1600.1
167.5°	1618.4	1617.3	1616.2	1615.2	1614.0	1613.6	1613.6	1613.6	1613.6	1613.6	1615.7
170°	1627.2	1626.1	1625.0	1623.9	1622.9	1622.3	1622.3	1622.3	1622.3	1622.3	1624.5
172.5°	1633.0	1631.7	1630.4	1629.1	1627.8	1627.3	1627.5	1627.7	1627.9	1628.2	1630.4
175°	1640.5	1639.2	1637.9	1636.6	1635.2	1634.6	1634.9	1635.2	1635.4	1635.7	1637.6
177.5°	1642.5	1641.4	1640.4	1639.3	1638.2	1637.8	1638.0	1638.2	1638.4	1638.7	1640.4
180°	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4
2.5°	1484.7	1487.0	1489.3	1490.4	1490.1	1489.9	1489.6	1489.5
5°	1476.9	1479.8	1482.6	1483.8	1483.2	1482.6	1482.1	1481.5
7.5°	1461.3	1463.8	1466.4	1467.5	1467.1	1466.8	1466.5	1466.2
10°	1446.9	1449.4	1452.0	1453.0	1452.5	1451.9	1451.3	1450.7
12.5°	1431.2	1433.1	1434.9	1435.7	1435.3	1435.0	1434.7	1434.4
15°	1402.7	1405.0	1407.3	1407.6	1405.9	1404.2	1402.5	1400.8
17.5°	1366.8	1368.4	1369.9	1370.4	1369.9	1369.2	1368.6	1368.0
20°	1340.3	1341.4	1342.6	1342.6	1341.8	1340.9	1340.1	1339.2
22.5°	1312.1	1313.0	1313.9	1313.9	1312.8	1311.7	1310.6	1309.5
25°	1265.5	1265.8	1266.1	1265.8	1264.9	1264.0	1263.2	1262.3
27.5°	1215.9	1216.1	1216.3	1215.9	1214.9	1213.7	1212.7	1211.6
30°	1181.6	1181.6	1181.6	1180.6	1178.6	1176.6	1174.6	1172.6
32.5°	1145.6	1144.0	1142.4	1141.1	1140.0	1138.9	1137.8	1136.8
35°	1087.2	1085.5	1083.8	1082.2	1080.8	1079.4	1077.9	1076.5
37.5°	1026.8	1024.7	1022.7	1021.2	1020.3	1019.4	1018.5	1017.6
40°	987.4	985.1	982.8	981.1	980.0	978.8	977.7	976.6
42.5°	946.4	944.1	941.8	940.1	939.0	937.8	936.7	935.6
45°	885.2	881.7	878.3	875.9	874.5	873.0	871.6	870.2
47.5°	820.7	817.3	813.9	811.6	810.4	809.1	807.9	806.7
50°	778.0	774.9	771.8	769.4	767.7	766.0	764.3	762.5
52.5°	734.9	732.2	729.5	727.3	725.6	723.9	722.2	720.5
55°	669.1	666.0	662.8	660.6	659.2	657.7	656.3	654.8
57.5°	604.5	601.7	598.8	596.6	595.0	593.4	591.7	590.0
60°	558.8	556.2	553.7	551.6	550.2	548.8	547.4	545.9
62.5°	514.7	512.1	509.6	507.8	506.8	505.8	504.9	503.9
65°	449.1	446.9	444.6	443.0	442.1	441.3	440.4	439.6
67.5°	384.1	382.0	380.1	378.5	377.3	376.1	374.9	373.7
70°	342.0	340.1	338.0	336.3	334.9	333.5	332.1	330.7
72.5°	299.5	297.7	295.9	294.6	293.9	293.2	292.4	291.7
75°	238.1	236.7	235.2	234.1	233.3	232.4	231.5	230.6
77.5°	180.8	179.9	178.9	178.4	178.4	178.4	178.4	178.4
80°	144.2	144.0	143.7	143.6	143.6	143.6	143.6	143.6
82.5°	111.0	110.5	110.0	109.6	109.3	109.2	108.9	108.7
85°	62.9	62.4	61.8	61.6	61.6	61.6	61.6	61.6
87.5°	28.4	28.4	28.4	28.4	28.5	28.6	28.7	28.9
90°	31.4	32.5	33.6	34.4	35.0	35.5	36.0	36.5
92.5°	34.7	36.4	38.2	39.1	39.5	39.8	40.1	40.4
95°	41.6	43.5	45.3	46.3	46.3	46.3	46.3	46.3
97.5°	43.6	45.7	47.9	49.2	49.4	49.7	50.0	50.2
100°	44.5	46.7	48.9	50.1	50.4	50.6	51.0	51.2
102.5°	66.8	60.1	53.3	50.2	50.7	51.2	51.7	52.2
105°	171.0	123.1	75.2	51.4	52.0	52.6	53.1	53.6
107.5°	418.9	383.8	348.6	313.0	276.9	240.7	204.6	168.4
110°	531.8	522.9	514.0	490.1	451.3	412.6	373.9	335.2



TEST NUMBER: P332238-930

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	611.5	611.6	611.8	607.8	599.6	591.4	583.3	575.0
115°	705.1	707.8	710.5	712.3	713.5	714.5	715.6	716.7
117.5°	789.8	791.9	794.1	795.3	795.5	795.7	796.0	796.1
120°	845.4	847.5	849.7	850.8	850.8	850.8	850.8	850.8
122.5°	899.6	901.2	902.7	903.5	903.8	903.9	904.2	904.4
125°	976.2	976.7	977.2	977.8	978.4	978.8	979.4	980.0
127.5°	1052.9	1053.8	1054.6	1054.8	1054.3	1053.7	1053.1	1052.6
130°	1099.1	1100.2	1101.3	1101.6	1101.1	1100.5	1099.9	1099.4
132.5°	1143.0	1144.1	1145.2	1145.3	1144.6	1143.9	1143.0	1142.3
135°	1209.5	1210.3	1211.1	1211.1	1210.3	1209.5	1208.7	1207.9
137.5°	1268.8	1270.1	1271.4	1271.7	1271.2	1270.6	1270.1	1269.6
140°	1306.4	1307.4	1308.5	1308.8	1308.2	1307.7	1307.2	1306.6
142.5°	1342.0	1342.9	1343.7	1343.8	1343.0	1342.2	1341.5	1340.8
145°	1391.8	1392.4	1392.9	1393.2	1393.2	1393.2	1393.2	1393.2
147.5°	1436.4	1437.0	1437.5	1437.1	1435.9	1434.7	1433.4	1432.2
150°	1463.7	1464.3	1464.8	1464.7	1463.9	1463.1	1462.2	1461.4
152.5°	1488.0	1489.0	1490.0	1489.8	1488.6	1487.3	1486.0	1484.8
155°	1521.4	1522.7	1524.1	1524.0	1522.3	1520.7	1519.1	1517.5
157.5°	1550.5	1552.1	1553.7	1553.5	1551.4	1549.2	1547.1	1545.0
160°	1567.1	1568.6	1570.3	1570.2	1568.2	1566.4	1564.5	1562.6
162.5°	1582.1	1584.0	1585.8	1585.8	1584.2	1582.5	1580.9	1579.2
165°	1602.2	1604.4	1606.6	1606.7	1604.8	1603.0	1601.0	1599.1
167.5°	1617.9	1620.0	1622.2	1622.2	1620.0	1617.9	1615.7	1613.6
170°	1626.6	1628.8	1631.0	1631.0	1628.8	1626.6	1624.5	1622.3
172.5°	1632.5	1634.7	1636.8	1636.7	1634.3	1632.0	1629.5	1627.2
175°	1639.5	1641.4	1643.3	1643.2	1641.0	1638.8	1636.6	1634.5
177.5°	1642.1	1643.8	1645.6	1645.4	1643.2	1641.0	1638.8	1636.7
180°	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5

(END OF REPORT)