

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: P333085-935

Luminaire Tested: **S124RDIW-S1020D1050U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333085-935
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: S124RDIW-S1020D1050U935-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1050 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7203.2 lumens
Efficiency: N/A
Efficacy: 117.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

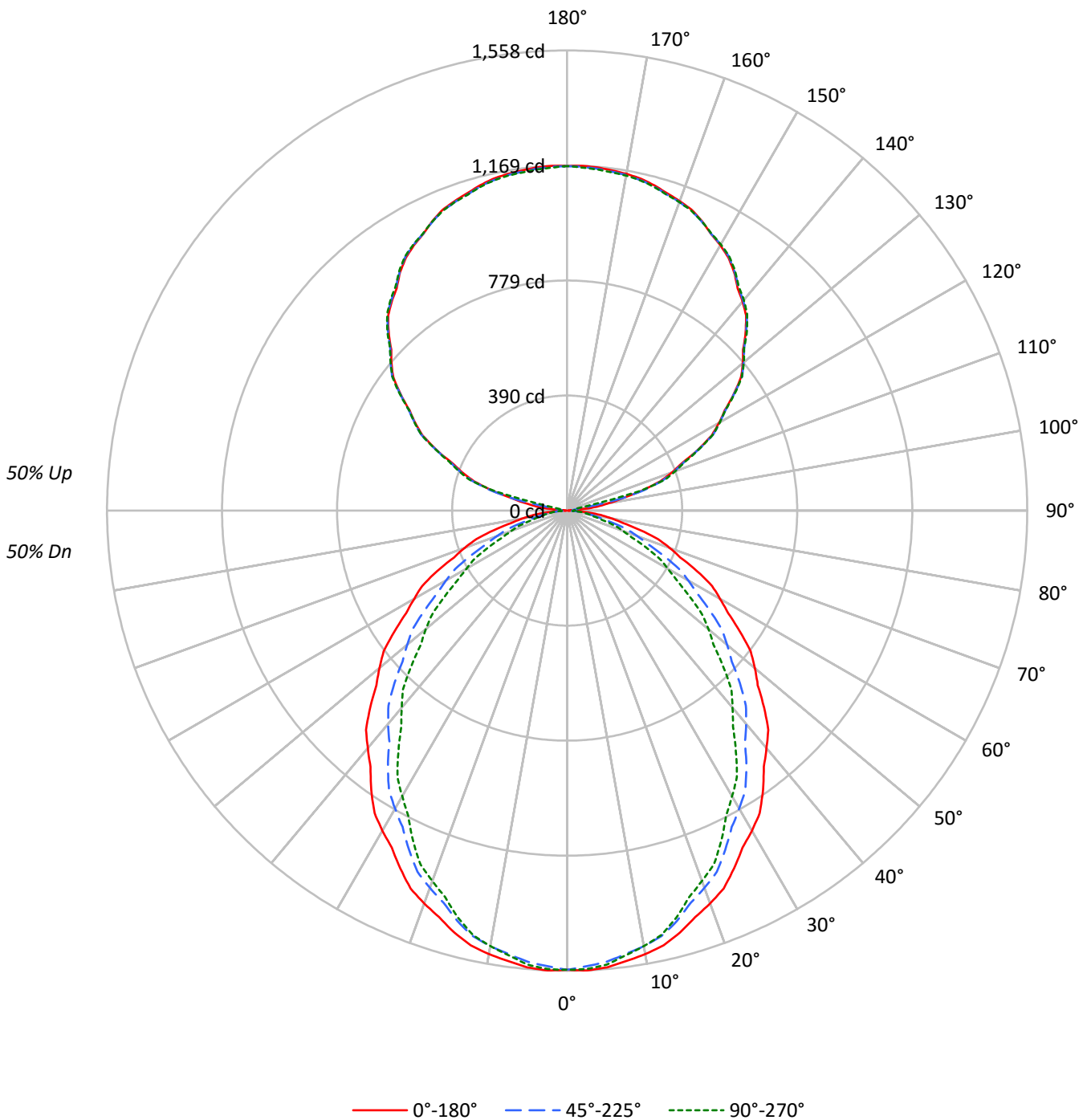
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	107	107	107	107	99	99	99	99	83	83	83		69	69	69		56	56	56	50
1	98	94	90	87	90	87	83	81	73	71	69		61	60	58		50	49	48	43
2	89	82	76	71	82	76	71	66	65	61	57		54	51	49		44	42	41	36
3	82	72	65	60	75	67	61	56	57	53	49		48	45	42		39	37	35	31
4	75	64	57	51	69	60	53	48	51	46	42		43	39	36		35	33	30	27
5	69	57	49	43	63	53	46	41	46	40	36		39	34	31		32	29	27	23
6	63	52	44	38	58	48	41	36	41	36	32		35	31	27		29	26	23	21
7	59	47	39	33	54	43	36	31	37	32	28		32	28	24		27	23	21	18
8	55	42	35	29	50	40	33	28	34	29	25		29	25	22		25	21	19	16
9	51	39	31	26	47	36	30	25	31	26	22		27	23	20		23	19	17	15
10	48	36	28	24	44	33	27	22	29	24	20		25	21	18		21	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	12551	12551	12551
5°	12580	12426	12503
10°	12500	12276	12276
15°	12357	12018	11929
20°	12160	11679	11465
25°	11908	11282	10996
30°	11663	10864	10409
35°	11392	10430	9819
40°	11065	9936	9183
45°	10764	9445	8535
50°	10420	8881	7850
55°	10054	8294	7104
60°	9649	7650	6344
65°	9278	6844	5593
70°	8738	5958	4749
75°	8057	4938	3862
80°	7029	3761	3543
85°	5956	3418	3196



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	2.0
10°-20°	407.3	5.7
20°-30°	588.1	8.2
30°-40°	666.6	9.3
40°-50°	643.7	8.9
50°-60°	535.3	7.4
60°-70°	369.6	5.1
70°-80°	187.4	2.6
80°-90°	51.4	0.7
90°-100°	39.9	0.6
100°-110°	254.3	3.5
110°-120°	486.6	6.8
120°-130°	617.7	8.6
130°-140°	660.8	9.2
140°-150°	618.0	8.6
150°-160°	498.3	6.9
160°-170°	321.4	4.5
170°-180°	110.8	1.5
0°-30°	1141.4	15.8
0°-40°	1808.0	25.1
0°-60°	2987.0	41.5
0°-90°	3595.4	49.9
90°-120°	780.8	10.8
90°-150°	2677.3	37.2
90°-180°	3608.0	50.1
0°-180°	7203.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1555	1555	1555	1555	1555	
5°	1552	1547	1533	1544	1543	147
15°	1478	1467	1438	1435	1427	416
25°	1337	1314	1267	1247	1234	616
35°	1156	1117	1058	1019	996	722
45°	943	897	827	771	748	727
55°	714	665	589	530	505	639
65°	486	433	358	309	293	479
75°	258	214	158	132	124	273
85°	64	42	37	35	34	72
90°	3	12	19	24	26	5
95°	48	20	19	24	25	62
105°	263	268	272	278	249	275
115°	490	493	492	494	494	482
125°	689	692	691	693	694	615
135°	855	854	858	859	861	658
145°	986	988	988	989	991	616
155°	1081	1082	1079	1082	1080	498
165°	1140	1136	1136	1142	1135	322
175°	1166	1161	1162	1169	1159	111
180°	1166	1166	1166	1166	1166	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7
2.5°	1558.5	1557.6	1556.8	1556.0	1555.1	1553.5	1551.2	1548.9	1546.5	1544.2	1546.5
5°	1552.3	1551.3	1550.2	1549.1	1548.1	1545.9	1542.8	1539.6	1536.5	1533.3	1535.9
7.5°	1538.3	1537.1	1536.0	1534.9	1533.8	1531.2	1527.1	1522.9	1518.8	1514.7	1516.4
10°	1524.9	1523.6	1522.2	1521.0	1519.7	1516.6	1511.8	1507.1	1502.3	1497.5	1498.6
12.5°	1507.8	1506.2	1504.7	1503.2	1501.7	1498.1	1492.5	1486.9	1481.3	1475.7	1476.3
15°	1478.5	1476.1	1473.8	1471.4	1469.0	1464.5	1457.8	1451.2	1444.7	1438.0	1437.5
17.5°	1443.0	1439.6	1436.1	1432.7	1429.3	1423.6	1415.7	1407.7	1399.8	1391.8	1390.3
20°	1415.4	1412.0	1408.5	1405.1	1401.6	1395.4	1386.5	1377.4	1368.5	1359.4	1357.4
22.5°	1384.9	1381.0	1377.2	1373.4	1369.5	1362.7	1353.1	1343.5	1333.9	1324.2	1321.0
25°	1336.9	1332.1	1327.3	1322.6	1317.8	1310.0	1299.2	1288.3	1277.5	1266.6	1262.1
27.5°	1286.3	1280.4	1274.5	1268.4	1262.5	1253.7	1242.1	1230.5	1218.9	1207.3	1201.8
30°	1251.1	1244.5	1237.9	1231.3	1224.7	1215.1	1202.7	1190.2	1177.8	1165.4	1158.8
32.5°	1214.0	1206.5	1199.0	1191.6	1184.1	1174.0	1161.1	1148.3	1135.4	1122.6	1114.9
35°	1155.9	1147.5	1138.9	1130.5	1122.1	1111.2	1097.9	1084.8	1071.5	1058.3	1049.3
37.5°	1093.7	1085.0	1076.3	1067.6	1058.9	1047.1	1032.5	1017.9	1003.2	988.5	978.4
40°	1050.0	1041.2	1032.5	1023.7	1015.0	1003.2	988.1	972.9	957.9	942.8	931.7
42.5°	1008.1	998.9	989.7	980.6	971.5	959.0	943.3	927.6	911.9	896.1	884.8
45°	942.8	933.1	923.3	913.4	903.6	890.8	874.9	859.1	843.2	827.3	814.4
47.5°	875.5	865.3	855.2	845.2	835.0	821.7	805.2	788.7	772.1	755.7	742.3
50°	829.7	819.4	809.1	798.7	788.4	774.8	757.9	741.0	724.0	707.1	693.9
52.5°	783.1	772.9	762.8	752.8	742.6	728.9	711.5	694.2	676.8	659.5	646.1
55°	714.3	703.7	693.1	682.5	671.9	658.1	640.8	623.6	606.5	589.3	575.5
57.5°	646.2	635.2	624.1	613.1	602.2	588.1	571.3	554.3	537.4	520.5	506.5
60°	597.6	587.0	576.4	565.8	555.3	541.5	524.6	507.6	490.7	473.8	460.0
62.5°	553.8	542.8	531.8	520.7	509.8	495.6	478.2	460.9	443.5	426.2	413.5
65°	485.7	474.3	463.0	451.6	440.2	426.0	409.1	392.2	375.2	358.3	347.0
67.5°	415.0	404.1	393.2	382.3	371.3	358.1	342.3	326.7	310.9	295.2	285.4
70°	370.2	359.1	348.0	336.9	325.8	312.7	297.6	282.5	267.4	252.4	243.7
72.5°	322.6	312.5	302.5	292.5	282.4	270.3	256.1	241.8	227.6	213.4	205.9
75°	258.3	248.6	238.8	228.9	219.2	208.0	195.6	183.2	170.7	158.3	152.2
77.5°	193.1	184.8	176.5	168.2	159.9	150.7	140.6	130.6	120.5	110.5	106.9
80°	151.2	143.5	135.9	128.2	120.5	112.7	104.8	96.9	88.9	80.9	80.2
82.5°	115.0	108.0	100.9	93.8	86.9	81.0	76.5	72.0	67.4	62.9	62.3
85°	64.3	59.0	53.7	48.4	43.1	40.0	39.3	38.5	37.7	36.9	36.3
87.5°	22.4	21.2	19.9	18.6	17.4	16.8	16.9	17.0	17.0	17.1	17.2
90°	2.6	4.7	6.9	9.0	11.1	13.0	14.6	16.1	17.7	19.2	20.3
92.5°	11.0	11.1	11.2	11.4	11.5	12.3	13.9	15.4	17.0	18.5	19.6
95°	48.0	41.4	34.8	28.2	21.6	18.4	18.6	18.8	19.0	19.2	20.3
97.5°	101.9	106.0	110.1	114.3	118.3	109.6	87.9	66.3	44.7	23.0	23.2
100°	143.1	146.5	150.1	153.5	157.0	145.4	118.6	91.9	65.2	38.4	35.1
102.5°	189.2	191.7	194.2	196.8	199.3	198.9	195.4	191.9	188.4	184.9	149.4
105°	262.6	263.7	264.9	266.0	267.3	268.3	269.2	270.3	271.2	272.2	273.9
107.5°	330.8	331.4	331.9	332.5	333.1	334.1	335.4	336.7	338.0	339.3	340.2
110°	376.9	377.5	378.0	378.6	379.2	380.0	381.3	382.4	383.6	384.7	385.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	421.5	422.6	423.6	424.6	425.7	426.5	427.1	427.6	428.1	428.7	428.6
115°	490.3	490.9	491.5	492.0	492.6	492.8	492.6	492.4	492.2	492.0	492.4
117.5°	552.2	552.9	553.7	554.5	555.3	555.9	556.3	556.7	557.2	557.6	557.5
120°	594.1	594.9	595.6	596.4	597.2	597.4	597.3	597.1	596.8	596.7	597.1
122.5°	633.2	633.6	634.0	634.6	635.0	635.4	635.7	635.9	636.2	636.5	636.7
125°	689.1	689.9	690.7	691.5	692.2	692.4	692.1	691.6	691.3	690.9	691.5
127.5°	742.2	742.4	742.6	742.8	743.0	743.5	744.4	745.3	746.1	747.1	747.0
130°	776.4	776.6	776.8	777.0	777.1	777.6	778.2	778.7	779.3	779.9	780.1
132.5°	807.8	808.1	808.5	808.8	809.2	809.8	810.5	811.2	811.9	812.7	812.9
135°	854.9	854.7	854.5	854.3	854.1	854.5	855.2	856.0	856.8	857.6	857.9
137.5°	896.6	896.6	896.7	896.8	896.9	897.3	898.2	899.1	899.9	900.8	901.2
140°	923.9	924.2	924.6	925.0	925.4	925.7	926.2	926.5	927.0	927.3	927.9
142.5°	948.2	948.9	949.6	950.4	951.1	951.5	951.7	951.9	952.2	952.4	952.9
145°	985.8	986.4	986.9	987.5	988.1	988.3	988.3	988.3	988.3	988.3	988.6
147.5°	1015.5	1016.7	1017.8	1018.8	1019.9	1020.4	1020.2	1020.0	1019.8	1019.6	1019.8
150°	1037.2	1038.0	1038.8	1039.6	1040.3	1040.6	1040.4	1040.3	1040.0	1039.8	1039.8
152.5°	1055.3	1056.0	1056.6	1057.2	1057.8	1058.0	1057.7	1057.3	1057.0	1056.6	1056.9
155°	1080.8	1081.1	1081.2	1081.4	1081.6	1081.4	1080.8	1080.3	1079.7	1079.1	1079.9
157.5°	1102.3	1102.2	1102.1	1101.9	1101.8	1101.5	1100.8	1100.1	1099.5	1098.8	1099.8
160°	1114.8	1114.3	1113.7	1113.1	1112.5	1112.2	1112.0	1111.7	1111.6	1111.4	1112.5
162.5°	1126.0	1125.3	1124.6	1123.8	1123.1	1122.6	1122.4	1122.2	1122.1	1121.8	1123.0
165°	1140.1	1139.2	1138.2	1137.2	1136.3	1135.8	1135.8	1135.8	1135.8	1135.8	1137.4
167.5°	1151.3	1150.3	1149.3	1148.3	1147.3	1146.8	1146.6	1146.5	1146.4	1146.2	1148.0
170°	1157.6	1156.4	1155.3	1154.1	1153.0	1152.4	1152.6	1152.9	1153.1	1153.2	1154.8
172.5°	1161.7	1160.6	1159.4	1158.3	1157.1	1156.7	1156.8	1157.0	1157.3	1157.4	1159.0
175°	1166.3	1165.2	1164.0	1162.9	1161.7	1161.2	1161.4	1161.6	1161.7	1162.0	1163.7
177.5°	1168.4	1167.3	1166.2	1165.2	1164.1	1163.7	1164.0	1164.3	1164.6	1164.9	1166.1
180°	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7
2.5°	1548.9	1551.2	1553.5	1554.6	1554.4	1554.2	1553.9	1553.8
5°	1538.5	1541.2	1543.9	1544.9	1544.4	1543.9	1543.3	1542.8
7.5°	1518.1	1519.8	1521.5	1521.9	1521.0	1520.2	1519.3	1518.5
10°	1499.7	1500.7	1501.8	1501.8	1500.7	1499.7	1498.6	1497.5
12.5°	1476.9	1477.6	1478.2	1477.7	1476.3	1474.8	1473.3	1471.9
15°	1437.0	1436.4	1435.9	1434.7	1432.9	1431.0	1429.2	1427.3
17.5°	1388.9	1387.4	1386.0	1383.8	1381.0	1378.2	1375.4	1372.5
20°	1355.2	1353.1	1351.0	1348.2	1344.8	1341.4	1337.9	1334.5
22.5°	1317.8	1314.7	1311.6	1308.5	1305.7	1303.0	1300.1	1297.4
25°	1257.6	1253.1	1248.6	1245.0	1242.4	1239.8	1237.1	1234.5
27.5°	1196.2	1190.7	1185.1	1180.4	1176.6	1172.8	1169.0	1165.2
30°	1152.2	1145.6	1138.9	1133.5	1129.3	1125.1	1120.8	1116.6
32.5°	1107.2	1099.6	1091.9	1086.1	1082.0	1078.0	1074.0	1070.0
35°	1040.3	1031.3	1022.3	1015.5	1010.6	1005.9	1001.2	996.3
37.5°	968.5	958.4	948.3	940.9	936.2	931.3	926.6	921.9
40°	920.6	909.5	898.4	890.4	885.7	880.9	876.2	871.4
42.5°	873.5	862.2	850.8	842.7	837.8	832.8	827.8	822.9
45°	801.4	788.4	775.5	766.6	761.9	757.1	752.3	747.6
47.5°	728.8	715.4	701.9	692.6	687.3	682.1	676.8	671.7
50°	680.6	667.4	654.2	645.1	640.1	635.0	630.0	625.0
52.5°	632.6	619.1	605.7	596.4	591.2	585.9	580.7	575.5
55°	561.7	548.0	534.3	524.9	519.8	514.8	509.8	504.7
57.5°	492.5	478.5	464.6	455.7	451.9	448.1	444.3	440.5
60°	446.3	432.5	418.8	409.7	405.5	401.3	397.1	392.9
62.5°	400.8	388.1	375.4	367.3	363.9	360.6	357.1	353.8
65°	335.5	324.2	312.8	305.6	302.4	299.2	296.0	292.8
67.5°	275.6	265.9	256.1	249.4	245.9	242.5	238.9	235.5
70°	234.9	226.2	217.5	211.7	209.1	206.5	203.8	201.2
72.5°	198.4	191.0	183.5	178.6	176.1	173.7	171.3	168.8
75°	146.2	140.1	134.0	130.2	128.5	127.0	125.4	123.8
77.5°	103.4	99.9	96.3	94.3	93.8	93.3	92.8	92.4
80°	79.4	78.6	77.7	77.2	77.0	76.7	76.5	76.2
82.5°	61.6	61.1	60.5	60.1	59.8	59.6	59.3	59.1
85°	35.8	35.3	34.8	34.5	34.5	34.5	34.5	34.5
87.5°	17.2	17.2	17.2	17.4	17.7	18.0	18.3	18.6
90°	21.5	22.6	23.8	24.6	25.0	25.4	25.7	26.2
92.5°	20.8	22.0	23.2	23.8	23.8	23.9	24.0	24.1
95°	21.5	22.6	23.8	24.5	24.7	24.9	25.1	25.3
97.5°	23.2	23.4	23.5	23.7	23.8	24.0	24.2	24.5
100°	31.8	28.5	25.2	23.7	23.8	24.0	24.2	24.5
102.5°	113.8	78.3	42.7	25.0	25.0	25.1	25.1	25.1
105°	275.7	277.4	279.1	276.6	269.6	262.6	255.6	248.7
107.5°	341.0	341.9	342.8	343.5	344.3	345.0	345.8	346.5
110°	385.5	385.9	386.2	386.8	387.4	387.9	388.5	389.1



TEST NUMBER: P333085-935

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	428.5	428.4	428.3	428.7	429.5	430.2	430.9	431.6
115°	492.8	493.2	493.5	493.8	493.8	493.8	493.8	493.8
117.5°	557.4	557.4	557.3	557.2	557.2	557.1	557.0	556.9
120°	597.4	597.9	598.2	598.2	597.9	597.4	597.1	596.7
122.5°	637.0	637.1	637.4	637.3	637.0	636.5	636.2	635.8
125°	692.1	692.7	693.2	693.6	693.8	694.0	694.2	694.4
127.5°	746.8	746.7	746.6	746.5	746.3	746.1	746.0	745.9
130°	780.2	780.5	780.7	780.8	780.8	780.8	780.8	780.8
132.5°	813.0	813.3	813.5	813.5	813.3	813.1	813.0	812.9
135°	858.3	858.7	859.1	859.5	859.9	860.2	860.7	861.0
137.5°	901.6	902.1	902.5	902.7	902.5	902.4	902.3	902.2
140°	928.5	929.0	929.6	930.1	930.2	930.4	930.6	930.8
142.5°	953.3	953.7	954.2	954.3	954.4	954.4	954.5	954.5
145°	988.8	988.9	989.1	989.5	989.8	990.2	990.6	991.0
147.5°	1019.9	1020.0	1020.2	1020.4	1020.6	1020.8	1021.0	1021.1
150°	1039.8	1039.8	1039.8	1039.9	1040.1	1040.3	1040.5	1040.7
152.5°	1057.2	1057.5	1057.8	1057.9	1057.8	1057.7	1057.6	1057.5
155°	1080.6	1081.4	1082.2	1082.3	1081.7	1081.2	1080.6	1080.0
157.5°	1100.8	1101.8	1102.9	1102.9	1101.8	1100.8	1099.8	1098.8
160°	1113.7	1114.8	1116.0	1116.0	1114.8	1113.7	1112.5	1111.4
162.5°	1124.1	1125.3	1126.4	1126.4	1125.1	1123.8	1122.5	1121.1
165°	1138.9	1140.5	1142.0	1141.9	1140.1	1138.4	1136.7	1134.9
167.5°	1149.7	1151.4	1153.1	1153.0	1151.1	1149.1	1147.2	1145.2
170°	1156.3	1157.9	1159.4	1159.3	1157.3	1155.4	1153.4	1151.5
172.5°	1160.5	1162.1	1163.6	1163.4	1161.2	1159.2	1157.1	1154.9
175°	1165.4	1167.2	1169.0	1168.6	1166.3	1164.0	1161.7	1159.3
177.5°	1167.4	1168.6	1169.9	1169.6	1167.7	1165.9	1164.0	1162.2
180°	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3

(END OF REPORT)