

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: P332978-935

Luminaire Tested: **S124RDIP-S1020D1035U935-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332978-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124RDIP-S1020D1035U935-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1035 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6776.3 lumens
Efficiency: N/A
Efficacy: 112.0 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

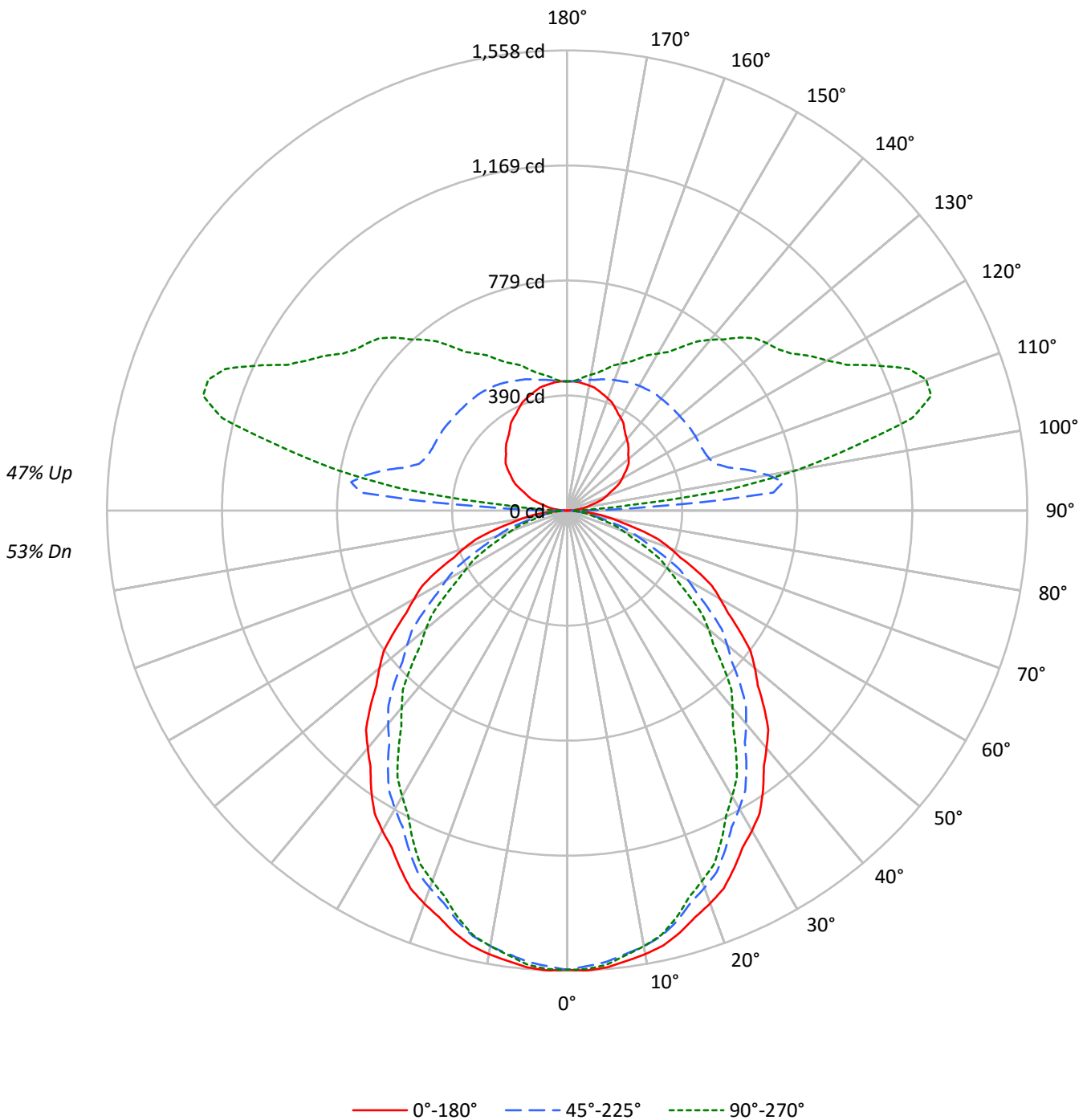
Input Watts (W): 60.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	108	108	108	100	100	100	100	85	85	85	71	71	71	59	59	59	53
1	99	95	91	87	91	88	84	82	75	73	70	63	62	60	53	51	50	45
2	90	83	77	72	83	77	72	67	66	62	59	56	53	51	47	45	43	38
3	82	73	66	60	76	68	62	57	58	54	50	50	46	43	41	39	37	33
4	76	65	57	51	70	60	54	48	52	47	43	44	40	37	37	34	32	28
5	69	58	50	44	64	54	47	42	47	41	37	40	36	32	34	30	28	25
6	64	52	44	38	59	49	41	36	42	37	32	36	32	28	31	27	25	22
7	59	47	39	34	55	44	37	32	38	33	29	33	29	25	28	25	22	19
8	55	43	35	30	51	40	33	28	35	29	25	30	26	23	26	22	20	18
9	51	39	32	27	48	37	30	25	32	27	23	28	24	20	24	20	18	16
10	48	36	29	24	45	34	27	23	30	24	21	26	22	19	22	19	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	2.2
10°-20°	407.3	6.0
20°-30°	588.1	8.7
30°-40°	666.6	9.8
40°-50°	643.7	9.5
50°-60°	535.3	7.9
60°-70°	369.6	5.5
70°-80°	187.4	2.8
80°-90°	50.5	0.7
90°-100°	316.0	4.7
100°-110°	657.7	9.7
110°-120°	589.1	8.7
120°-130°	495.5	7.3
130°-140°	413.2	6.1
140°-150°	315.7	4.7
150°-160°	221.9	3.3
160°-170°	130.5	1.9
170°-180°	42.5	0.6
0°-30°	1141.4	16.8
0°-40°	1808.0	26.7
0°-60°	2987.0	44.1
0°-90°	3594.4	53.0
90°-120°	1562.8	23.1
90°-150°	2787.1	41.1
90°-180°	3182.0	47.0
0°-180°	6776.3	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°	1	7	16	17	18	5
95°	28	89	700	347	210	32
105°	101	146	564	1214	1209	107
115°	177	222	503	966	1161	176
125°	247	293	500	822	927	220
135°	293	349	496	730	829	227
145°	338	387	493	615	676	212
155°	384	415	480	543	566	177
165°	419	432	460	487	494	118
175°	437	438	441	447	445	41
180°	438	438	438	438	438	



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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°	22.0	20.8	19.5	18.0	16.5	15.6	16.4	16.2	16.3	16.4	16.0
90°	0.9	2.6	5.2	6.0	6.9	6.9	12.1	12.1	13.8	15.5	14.6
92.5°	9.8	14.3	22.4	32.8	45.4	63.3	106.9	173.7	238.6	272.7	227.1
95°	28.3	30.9	39.5	50.7	71.4	107.5	182.2	323.2	528.7	700.5	720.3
97.5°	50.9	50.9	58.3	68.6	86.3	116.6	174.2	290.5	494.7	737.8	904.9
100°	65.3	65.3	71.4	81.6	98.0	125.5	176.2	273.4	448.7	691.0	911.1
102.5°	79.0	80.4	85.8	95.4	111.1	137.2	183.0	268.5	417.8	632.7	859.5
105°	100.6	103.1	107.5	117.8	133.2	158.2	199.4	270.8	391.1	563.9	765.9
107.5°	124.3	126.1	130.3	141.3	156.1	180.6	218.5	283.4	386.2	525.4	690.2
110°	140.1	141.8	146.1	156.4	171.9	195.1	232.9	293.1	387.6	512.3	652.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	155.2	157.0	162.0	171.6	187.0	210.3	246.7	303.4	391.8	506.1	631.1
115°	177.1	179.6	185.6	194.2	210.6	233.8	268.2	319.8	399.7	502.8	611.1
117.5°	199.8	202.2	207.5	217.0	232.2	256.3	289.0	336.4	408.1	502.0	602.2
120°	214.9	216.6	222.7	232.0	246.7	270.8	303.4	348.1	414.3	502.0	597.4
122.5°	228.7	230.3	236.3	245.1	261.1	284.5	317.2	359.1	420.5	501.3	591.9
125°	246.7	250.1	255.3	264.8	281.0	305.1	336.0	375.7	429.8	500.2	582.8
127.5°	262.7	265.4	271.6	282.4	299.5	323.7	353.6	389.9	437.1	498.3	570.6
130°	271.6	275.1	281.9	294.8	311.2	336.0	365.3	398.8	442.6	497.7	563.0
132.5°	280.5	283.3	292.2	304.4	322.2	345.7	375.0	407.8	447.5	497.0	556.1
135°	293.1	296.5	305.1	319.8	337.8	360.2	388.5	419.5	454.7	495.9	545.8
137.5°	305.7	308.9	318.4	332.3	351.0	372.4	398.8	427.7	459.0	495.8	536.8
140°	314.6	317.2	326.7	341.2	359.3	380.0	405.7	433.2	462.4	495.1	532.1
142.5°	324.3	326.8	335.5	349.5	366.9	386.8	411.9	437.3	465.2	495.1	528.0
145°	337.8	340.4	349.0	361.0	377.4	396.2	418.6	441.8	466.7	493.4	520.9
147.5°	353.1	354.0	361.5	373.9	387.4	404.5	425.5	445.7	467.6	490.3	514.5
150°	362.7	363.6	370.5	380.8	393.6	410.0	429.0	447.8	467.6	488.2	509.7
152.5°	371.7	371.9	378.8	388.3	399.8	414.8	431.7	449.2	466.2	484.7	504.2
155°	384.2	385.0	390.2	398.8	408.3	421.2	435.8	450.4	464.2	479.7	495.9
157.5°	396.4	396.4	401.2	407.9	416.2	426.4	438.7	450.4	461.9	474.3	487.5
160°	404.0	404.0	407.4	413.5	420.3	429.8	440.1	450.4	459.9	470.2	481.4
162.5°	410.9	410.2	412.9	418.3	424.5	431.9	441.4	450.4	457.8	466.1	475.9
165°	418.6	418.6	420.3	424.6	429.0	434.0	441.8	448.7	453.8	459.9	466.7
167.5°	426.4	425.5	426.4	429.6	432.0	435.9	441.6	446.6	449.7	453.7	458.5
170°	429.8	429.0	429.8	432.4	434.0	436.6	440.9	445.2	446.9	449.5	453.0
172.5°	433.2	432.4	432.5	434.4	435.4	437.3	440.2	443.8	444.2	445.4	448.2
175°	436.6	435.8	435.8	436.6	437.5	437.5	439.2	441.8	440.9	440.9	442.6
177.5°	438.2	437.5	436.8	437.5	437.5	437.5	438.2	439.5	438.2	438.2	438.9
180°	437.5	437.5	437.5	437.5	437.5	437.5	437.5	437.5	437.5	437.5	437.5



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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°	16.0	15.9	15.9	15.9	16.3	16.7	16.7	17.0
90°	15.5	16.4	17.2	17.2	18.1	18.9	18.1	18.1
92.5°	168.8	127.1	101.1	83.9	73.8	69.1	66.2	66.2
95°	636.9	503.7	388.5	305.1	263.0	236.3	220.9	209.7
97.5°	941.1	891.5	807.4	717.7	656.0	604.2	578.5	560.6
100°	1036.6	1053.8	1011.7	948.0	873.3	820.9	795.0	788.2
102.5°	1031.8	1117.1	1129.3	1102.8	1056.9	1018.9	991.8	986.3
105°	962.7	1111.4	1196.4	1231.7	1233.5	1226.6	1214.5	1209.4
107.5°	864.5	1022.9	1142.7	1219.3	1261.8	1281.4	1290.0	1292.3
110°	805.4	954.1	1078.7	1173.3	1234.3	1270.4	1285.9	1293.7



TEST NUMBER: P332978-935

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	762.1	893.5	1011.3	1105.9	1175.2	1218.8	1240.5	1253.0
115°	718.6	824.3	924.9	1007.4	1075.3	1126.9	1154.3	1161.2
117.5°	697.2	784.8	863.8	933.8	991.8	1035.1	1062.9	1068.2
120°	687.6	767.6	836.4	897.3	946.3	984.2	1006.5	1016.0
122.5°	679.4	756.6	819.2	872.6	914.0	946.3	965.3	974.7
125°	665.3	739.2	798.5	845.8	880.2	905.1	921.4	926.6
127.5°	648.1	718.8	777.9	822.8	857.3	879.5	893.2	898.4
130°	634.4	702.2	760.7	806.2	841.5	863.0	876.8	881.9
132.5°	619.9	683.7	740.7	786.4	820.9	845.1	858.2	863.3
135°	599.9	655.8	708.3	751.2	785.7	809.7	823.5	828.6
137.5°	581.9	629.2	673.4	712.2	744.3	768.1	779.5	785.7
140°	571.6	612.0	650.7	686.7	716.9	735.8	747.8	754.7
142.5°	562.0	597.5	630.8	662.0	688.6	706.2	716.9	721.7
145°	548.4	577.6	603.4	627.5	648.9	663.6	672.2	676.5
147.5°	537.2	560.4	581.1	599.9	615.8	628.4	634.9	636.4
150°	530.4	550.1	567.3	582.8	596.5	607.7	612.9	613.7
152.5°	522.8	539.8	555.6	568.3	580.1	589.1	592.2	593.1
155°	511.4	525.2	538.0	548.4	557.0	563.9	566.5	566.5
157.5°	499.2	510.7	521.6	529.9	536.3	541.5	543.0	543.0
160°	491.6	501.1	510.6	517.5	522.6	527.8	528.7	528.7
162.5°	484.1	492.1	499.6	505.8	509.5	514.7	515.6	514.9
165°	473.6	478.8	484.7	489.0	492.5	495.9	495.1	494.2
167.5°	463.5	467.4	472.3	474.8	476.6	478.8	478.6	477.9
170°	457.3	459.9	463.3	465.9	467.6	468.5	467.6	467.6
172.5°	451.8	453.7	455.7	457.6	458.7	459.5	458.7	457.3
175°	444.4	445.2	446.9	446.9	446.9	448.7	446.9	445.2
177.5°	439.5	440.2	440.2	440.9	440.2	440.9	439.5	438.2
180°	437.5	437.5	437.5	437.5	437.5	437.5	437.5	437.5

(END OF REPORT)