

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: P332983-940

Luminaire Tested: **SA4XXRDIP-C1020D1205U940-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332983-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXRDIP-C1020D1205U940-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1205 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

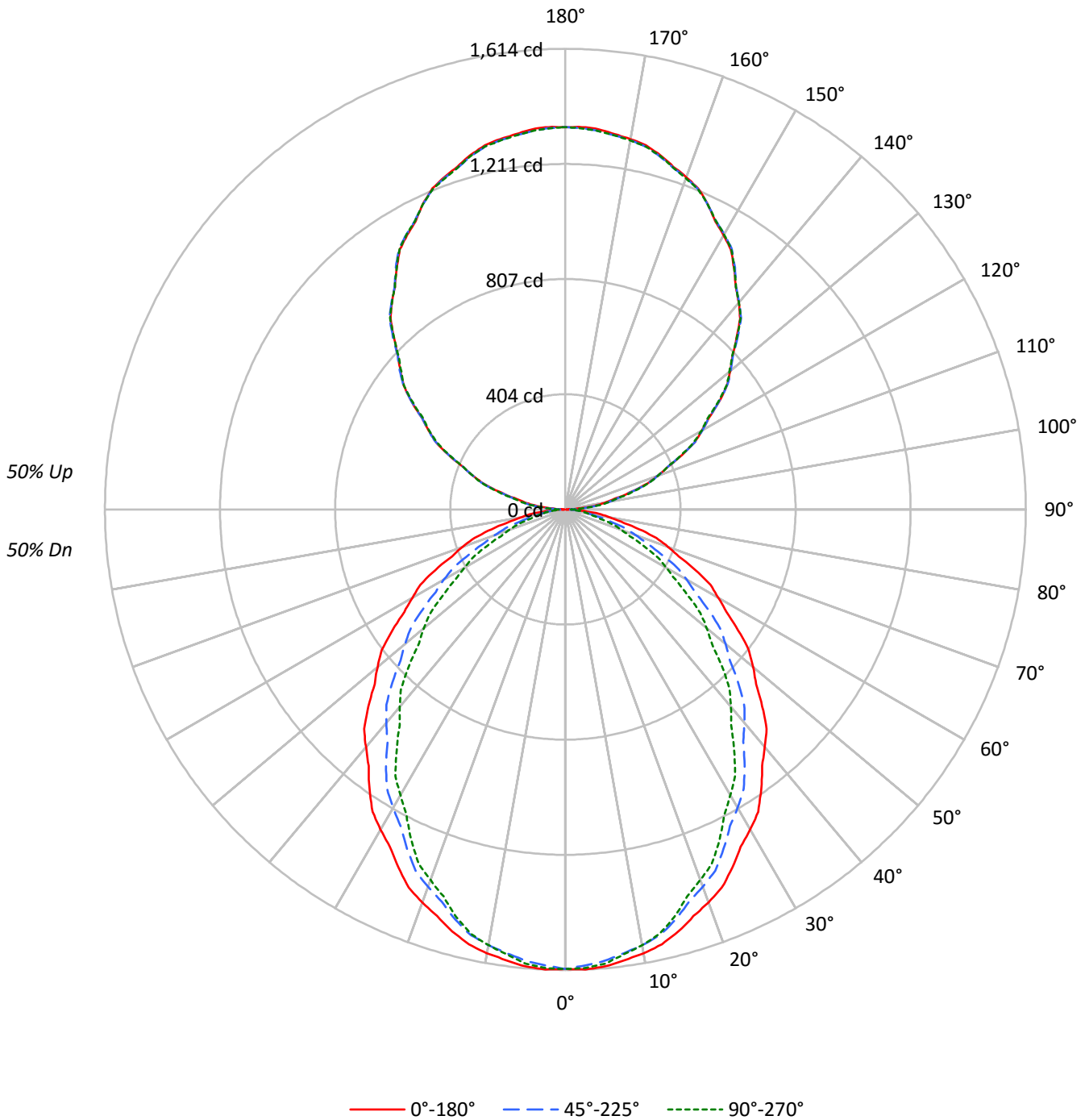
Lumens per Lamp: N/A
Luminaire Lumens: 7440.6 lumens
Efficiency: N/A
Efficacy: 113.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 65.4
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	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	84	81	73	71	69	61	60	58	50	49	48	43				
2	90	82	76	71	82	76	71	67	65	61	58	54	51	49	44	42	41	36				
3	82	73	65	60	75	67	61	56	57	53	49	48	45	42	40	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	35	31	32	29	27	23				
6	64	52	44	38	58	48	41	36	41	36	32	35	31	28	29	26	24	21				
7	59	47	39	33	54	43	36	31	38	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	17				
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°	12999	12999	12999
5°	13028	12869	12949
10°	12946	12714	12714
15°	12797	12447	12354
20°	12594	12095	11874
25°	12333	11685	11388
30°	12078	11251	10781
35°	11798	10801	10170
40°	11460	10290	9511
45°	11147	9782	8840
50°	10792	9198	8130
55°	10412	8590	7357
60°	9993	7923	6570
65°	9608	7089	5794
70°	9050	6170	4919
75°	8344	5115	3999
80°	7280	3896	3668
85°	6169	3548	3316



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.3	2.0
10°-20°	421.8	5.7
20°-30°	609.1	8.2
30°-40°	690.4	9.3
40°-50°	666.7	9.0
50°-60°	554.4	7.5
60°-70°	382.8	5.1
70°-80°	194.0	2.6
80°-90°	53.8	0.7
90°-100°	88.4	1.2
100°-110°	261.7	3.5
110°-120°	444.2	6.0
120°-130°	585.7	7.9
130°-140°	657.8	8.8
140°-150°	646.4	8.7
150°-160°	543.7	7.3
160°-170°	361.7	4.9
170°-180°	126.7	1.7
0°-30°	1182.1	15.9
0°-40°	1872.5	25.2
0°-60°	3093.5	41.6
0°-90°	3724.1	50.1
90°-120°	794.3	10.7
90°-150°	2684.3	36.1
90°-180°	3716.0	49.9
0°-180°	7440.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1610	1610	1610	1610	1610	
5°	1608	1602	1588	1599	1598	152
15°	1531	1519	1489	1486	1478	431
25°	1385	1361	1312	1291	1278	638
35°	1197	1156	1096	1055	1032	748
45°	976	929	857	799	774	753
55°	740	689	610	548	523	661
65°	503	449	371	320	303	497
75°	268	221	164	137	128	282
85°	67	43	38	36	36	75
90°	3	14	23	29	31	7
95°	62	71	79	82	82	69
105°	241	243	247	250	253	256
115°	452	452	450	449	448	445
125°	658	658	657	655	653	586
135°	848	854	855	853	850	656
145°	1031	1035	1036	1035	1032	645
155°	1181	1181	1180	1184	1180	543
165°	1286	1283	1280	1286	1282	362
175°	1338	1332	1331	1338	1331	127
180°	1340	1340	1340	1340	1340	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2
2.5°	1614.1	1613.2	1612.3	1611.5	1610.6	1608.9	1606.5	1604.1	1601.7	1599.3	1601.7
5°	1607.7	1606.6	1605.5	1604.4	1603.3	1601.1	1597.9	1594.6	1591.3	1588.0	1590.7
7.5°	1593.1	1592.0	1590.8	1589.7	1588.5	1585.8	1581.5	1577.3	1573.0	1568.7	1570.5
10°	1579.3	1578.0	1576.5	1575.2	1573.9	1570.7	1565.8	1560.9	1555.9	1551.0	1552.0
12.5°	1561.6	1560.0	1558.4	1556.8	1555.2	1551.5	1545.7	1539.9	1534.1	1528.3	1528.9
15°	1531.2	1528.7	1526.3	1523.8	1521.3	1516.7	1509.8	1503.0	1496.2	1489.3	1488.8
17.5°	1494.5	1490.9	1487.4	1483.8	1480.2	1474.4	1466.2	1457.9	1449.7	1441.5	1439.9
20°	1465.9	1462.3	1458.7	1455.2	1451.6	1445.2	1435.9	1426.6	1417.3	1407.9	1405.8
22.5°	1434.3	1430.3	1426.3	1422.4	1418.4	1411.3	1401.4	1391.4	1381.4	1371.5	1368.2
25°	1384.6	1379.6	1374.7	1369.8	1364.8	1356.7	1345.5	1334.3	1323.0	1311.8	1307.2
27.5°	1332.2	1326.1	1319.9	1313.7	1307.5	1298.4	1286.4	1274.4	1262.4	1250.4	1244.6
30°	1295.7	1288.9	1282.1	1275.2	1268.4	1258.5	1245.6	1232.7	1219.9	1207.0	1200.2
32.5°	1257.3	1249.6	1241.8	1234.1	1226.4	1215.8	1202.6	1189.3	1175.9	1162.6	1154.7
35°	1197.1	1188.4	1179.6	1170.8	1162.1	1150.8	1137.1	1123.5	1109.7	1096.0	1086.7
37.5°	1132.7	1123.7	1114.7	1105.6	1096.6	1084.5	1069.3	1054.2	1038.9	1023.8	1013.3
40°	1087.4	1078.3	1069.3	1060.2	1051.2	1038.9	1023.3	1007.6	992.0	976.4	964.9
42.5°	1044.0	1034.6	1025.0	1015.6	1006.1	993.2	977.0	960.6	944.4	928.1	916.4
45°	976.4	966.3	956.2	946.0	935.9	922.6	906.2	889.7	873.3	856.8	843.5
47.5°	906.7	896.2	885.7	875.3	864.8	851.0	833.9	816.8	799.7	782.7	768.7
50°	859.3	848.6	837.9	827.2	816.5	802.5	785.0	767.4	749.8	732.4	718.6
52.5°	811.0	800.5	790.1	779.6	769.1	754.9	736.9	719.0	701.0	683.1	669.1
55°	739.8	728.8	717.8	706.9	695.9	681.5	663.7	645.9	628.1	610.3	596.0
57.5°	669.2	657.8	646.4	635.0	623.7	609.1	591.7	574.1	556.5	539.0	524.6
60°	618.9	608.0	597.0	586.0	575.1	560.8	543.3	525.8	508.2	490.7	476.4
62.5°	573.5	562.1	550.7	539.3	528.0	513.3	495.3	477.3	459.3	441.4	428.2
65°	503.0	491.2	479.5	467.7	455.9	441.2	423.7	406.2	388.6	371.1	359.4
67.5°	429.8	418.5	407.2	395.9	384.6	370.9	354.5	338.3	322.0	305.8	295.6
70°	383.4	371.9	360.4	348.9	337.4	323.9	308.3	292.6	277.0	261.4	252.4
72.5°	334.1	323.7	313.3	302.9	292.5	279.9	265.2	250.4	235.7	221.0	213.2
75°	267.5	257.4	247.3	237.1	227.0	215.4	202.6	189.8	176.8	164.0	157.7
77.5°	200.0	191.4	182.8	174.2	165.6	156.0	145.6	135.3	124.8	114.4	110.8
80°	156.6	148.6	140.7	132.8	124.8	116.7	108.5	100.3	92.0	83.8	83.0
82.5°	119.1	111.8	104.5	97.2	90.0	83.9	79.3	74.5	69.8	65.1	64.5
85°	66.6	61.1	55.6	50.1	44.7	41.5	40.7	39.9	39.1	38.3	37.6
87.5°	23.3	22.0	20.8	19.5	18.3	17.7	17.9	18.1	18.2	18.4	18.5
90°	3.1	5.6	8.2	10.7	13.2	15.4	17.3	19.1	21.0	22.8	24.2
92.5°	22.2	25.1	28.0	30.9	33.8	35.8	37.2	38.4	39.8	41.0	41.8
95°	62.2	64.2	66.3	68.4	70.4	72.3	73.9	75.5	77.1	78.7	79.5
97.5°	108.6	110.2	111.9	113.5	115.2	117.0	118.9	120.7	122.6	124.5	125.4
100°	145.1	146.0	146.9	147.8	148.7	150.3	152.3	154.4	156.4	158.5	159.0
102.5°	183.2	183.5	183.9	184.2	184.7	185.7	187.6	189.6	191.5	193.3	193.9
105°	241.4	241.7	241.8	242.1	242.3	242.9	243.8	244.7	245.7	246.6	247.3
107.5°	302.5	302.8	303.1	303.4	303.6	303.8	304.0	304.1	304.3	304.3	305.1
110°	343.9	344.4	344.8	345.4	345.8	345.9	345.7	345.4	345.2	345.0	344.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	387.0	387.2	387.3	387.4	387.4	387.3	386.8	386.5	386.0	385.6	385.5
115°	451.7	451.7	451.7	451.7	451.7	451.5	451.0	450.6	450.0	449.6	449.4
117.5°	512.6	512.8	513.0	513.2	513.4	513.3	512.9	512.6	512.3	512.0	511.2
120°	553.2	554.1	555.1	556.0	556.9	557.1	556.3	555.6	554.9	554.3	553.1
122.5°	595.5	595.8	596.2	596.6	597.0	597.0	596.6	596.4	596.0	595.7	594.9
125°	657.8	657.8	657.8	657.8	657.8	657.7	657.5	657.3	657.0	656.8	656.4
127.5°	714.4	715.2	715.8	716.5	717.2	717.4	716.9	716.6	716.2	715.9	715.4
130°	754.2	754.9	755.5	756.3	757.0	757.3	757.3	757.3	757.3	757.3	756.9
132.5°	794.8	795.3	795.9	796.3	796.8	797.0	796.8	796.7	796.5	796.3	795.8
135°	848.5	849.9	851.2	852.7	854.0	854.7	854.7	854.7	854.7	854.7	854.3
137.5°	906.9	907.6	908.2	908.8	909.5	910.0	910.3	910.7	911.1	911.4	910.9
140°	945.8	946.3	946.8	947.3	947.7	947.9	947.9	947.9	947.9	947.9	947.7
142.5°	981.5	982.0	982.4	982.8	983.4	983.5	983.3	983.1	982.9	982.8	982.7
145°	1030.8	1031.7	1032.7	1033.6	1034.5	1035.1	1035.3	1035.5	1035.7	1036.0	1035.7
147.5°	1079.7	1080.8	1081.9	1083.0	1084.1	1084.6	1084.4	1084.2	1084.1	1083.9	1083.7
150°	1109.6	1110.4	1111.4	1112.3	1113.2	1113.7	1113.7	1113.7	1113.7	1113.7	1113.7
152.5°	1137.7	1138.3	1138.8	1139.3	1140.0	1140.3	1140.5	1140.7	1140.9	1141.0	1141.6
155°	1181.0	1181.0	1181.0	1181.0	1181.0	1180.9	1180.7	1180.4	1180.2	1180.0	1180.9
157.5°	1217.5	1217.1	1216.7	1216.3	1215.8	1215.6	1215.6	1215.5	1215.5	1215.4	1216.1
160°	1239.0	1238.9	1238.6	1238.3	1238.1	1237.9	1237.7	1237.4	1237.2	1237.0	1237.7
162.5°	1258.9	1258.3	1257.8	1257.1	1256.5	1256.2	1255.9	1255.7	1255.4	1255.2	1256.4
165°	1285.7	1285.0	1284.2	1283.6	1282.9	1282.3	1281.8	1281.4	1280.9	1280.5	1281.8
167.5°	1306.2	1305.2	1304.2	1303.2	1302.3	1301.8	1301.9	1301.9	1302.0	1302.0	1303.4
170°	1317.8	1316.6	1315.5	1314.3	1313.1	1312.7	1313.0	1313.1	1313.4	1313.7	1315.0
172.5°	1326.1	1325.1	1324.1	1323.1	1322.2	1321.7	1321.8	1321.9	1321.9	1322.0	1323.5
175°	1337.5	1336.3	1335.2	1334.0	1332.8	1332.1	1331.9	1331.7	1331.5	1331.2	1332.8
177.5°	1341.2	1340.2	1339.3	1338.5	1337.5	1337.0	1337.0	1337.0	1337.0	1337.0	1338.4
180°	1339.5	1339.5	1339.5	1339.5	1339.5	1339.5	1339.5	1339.5	1339.5	1339.5	1339.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2	1610.2
2.5°	1604.1	1606.5	1608.9	1610.1	1609.8	1609.6	1609.4	1609.2
5°	1593.4	1596.2	1598.9	1600.0	1599.5	1598.9	1598.4	1597.9
7.5°	1572.3	1574.0	1575.7	1576.2	1575.3	1574.4	1573.5	1572.6
10°	1553.2	1554.3	1555.3	1555.3	1554.3	1553.2	1552.0	1551.0
12.5°	1529.6	1530.3	1530.9	1530.4	1528.9	1527.4	1525.9	1524.4
15°	1488.3	1487.6	1487.1	1485.9	1484.0	1482.0	1480.2	1478.2
17.5°	1438.4	1436.9	1435.4	1433.2	1430.2	1427.4	1424.4	1421.5
20°	1403.6	1401.4	1399.2	1396.3	1392.8	1389.2	1385.6	1382.1
22.5°	1364.9	1361.6	1358.3	1355.2	1352.3	1349.4	1346.5	1343.6
25°	1302.4	1297.8	1293.2	1289.4	1286.7	1284.0	1281.2	1278.5
27.5°	1238.9	1233.1	1227.4	1222.5	1218.6	1214.6	1210.7	1206.8
30°	1193.3	1186.4	1179.6	1173.9	1169.6	1165.2	1160.8	1156.5
32.5°	1146.7	1138.8	1130.9	1124.8	1120.6	1116.4	1112.3	1108.1
35°	1077.4	1068.1	1058.7	1051.7	1046.7	1041.8	1036.9	1031.9
37.5°	1003.0	992.6	982.1	974.5	969.6	964.6	959.7	954.8
40°	953.4	941.9	930.4	922.2	917.3	912.3	907.4	902.5
42.5°	904.6	893.0	881.2	872.8	867.6	862.5	857.3	852.2
45°	830.0	816.5	803.2	794.0	789.1	784.1	779.2	774.3
47.5°	754.8	740.9	726.9	717.3	711.9	706.4	701.0	695.6
50°	704.9	691.3	677.5	668.1	662.9	657.6	652.5	647.3
52.5°	655.1	641.2	627.3	617.7	612.2	606.8	601.4	596.0
55°	581.8	567.6	553.3	543.6	538.3	533.2	528.0	522.7
57.5°	510.1	495.6	481.2	472.0	468.0	464.0	460.1	456.2
60°	462.2	447.9	433.7	424.4	420.0	415.6	411.3	406.9
62.5°	415.1	401.9	388.8	380.4	376.9	373.4	369.9	366.4
65°	347.5	335.7	324.0	316.5	313.2	309.9	306.6	303.3
67.5°	285.4	275.4	265.2	258.3	254.7	251.1	247.4	243.9
70°	243.3	234.3	225.2	219.3	216.6	213.8	211.1	208.4
72.5°	205.5	197.8	190.0	184.9	182.4	179.9	177.4	174.9
75°	151.4	145.1	138.8	134.8	133.1	131.5	129.8	128.2
77.5°	107.1	103.4	99.7	97.6	97.1	96.7	96.1	95.7
80°	82.2	81.4	80.5	80.0	79.7	79.5	79.2	78.9
82.5°	63.8	63.3	62.7	62.2	62.0	61.7	61.4	61.2
85°	37.1	36.6	36.0	35.8	35.8	35.8	35.8	35.8
87.5°	18.5	18.5	18.6	18.8	19.1	19.4	19.7	20.1
90°	25.6	26.9	28.4	29.2	29.7	30.1	30.6	31.1
92.5°	42.7	43.5	44.3	44.9	45.2	45.5	45.7	46.0
95°	80.1	80.8	81.5	81.9	81.9	81.9	81.9	81.9
97.5°	126.2	127.0	127.9	128.2	128.2	128.2	128.2	128.2
100°	159.4	159.9	160.3	160.6	160.6	160.6	160.6	160.6
102.5°	194.6	195.3	195.9	196.3	196.5	196.7	196.9	197.1
105°	248.0	248.6	249.3	250.0	250.7	251.4	252.1	252.8
107.5°	305.7	306.3	306.9	307.3	307.2	307.2	307.1	307.1
110°	344.0	343.6	343.1	343.2	343.9	344.6	345.4	346.0



TEST NUMBER: P332983-940

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	385.4	385.3	385.2	385.2	385.4	385.5	385.7	385.8
115°	449.2	448.9	448.7	448.4	448.3	448.0	447.8	447.5
117.5°	510.4	509.6	508.8	508.3	507.7	507.3	506.8	506.4
120°	552.0	550.8	549.7	549.3	549.7	550.2	550.7	551.2
122.5°	594.1	593.3	592.5	591.7	590.9	590.1	589.2	588.4
125°	655.9	655.4	655.0	654.5	654.1	653.6	653.1	652.6
127.5°	715.0	714.5	714.0	713.6	713.3	712.8	712.5	712.1
130°	756.3	755.9	755.5	754.7	753.9	753.0	752.0	751.1
132.5°	795.3	794.9	794.4	794.0	793.6	793.3	792.9	792.6
135°	853.8	853.3	852.8	852.3	851.6	850.9	850.2	849.5
137.5°	910.3	909.6	909.1	908.8	909.0	909.1	909.3	909.4
140°	947.4	947.3	947.0	946.8	946.6	946.3	946.1	945.8
142.5°	982.7	982.6	982.6	982.5	982.5	982.4	982.4	982.3
145°	1035.5	1035.3	1035.1	1034.6	1033.9	1033.2	1032.5	1031.9
147.5°	1083.5	1083.3	1083.1	1082.9	1082.7	1082.4	1082.2	1082.0
150°	1113.7	1113.7	1113.7	1113.6	1113.3	1113.1	1112.9	1112.7
152.5°	1142.1	1142.7	1143.3	1143.3	1142.6	1142.0	1141.4	1140.9
155°	1181.9	1182.8	1183.7	1183.7	1182.8	1181.9	1180.9	1180.0
157.5°	1216.8	1217.5	1218.2	1218.2	1217.4	1216.6	1215.8	1215.0
160°	1238.3	1239.0	1239.7	1239.5	1238.3	1237.2	1236.1	1234.9
162.5°	1257.7	1258.9	1260.2	1260.3	1259.1	1257.9	1256.8	1255.6
165°	1283.3	1284.6	1286.0	1286.2	1285.3	1284.4	1283.4	1282.5
167.5°	1304.8	1306.2	1307.5	1307.5	1306.1	1304.7	1303.2	1301.8
170°	1316.4	1317.8	1319.2	1319.0	1317.4	1315.8	1314.2	1312.6
172.5°	1325.1	1326.6	1328.2	1328.2	1326.5	1324.9	1323.3	1321.7
175°	1334.4	1336.1	1337.7	1337.7	1336.1	1334.4	1332.8	1331.2
177.5°	1339.6	1341.0	1342.2	1342.1	1340.6	1339.2	1337.7	1336.2
180°	1339.5	1339.5	1339.5	1339.5	1339.5	1339.5	1339.5	1339.5

(END OF REPORT)