

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: P331720-840

Luminaire Tested: **SA2XXRDIP-C865D725U840-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331720-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C865D725U840-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 725 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5973.6 lumens
Efficiency: N/A
Efficacy: 109.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

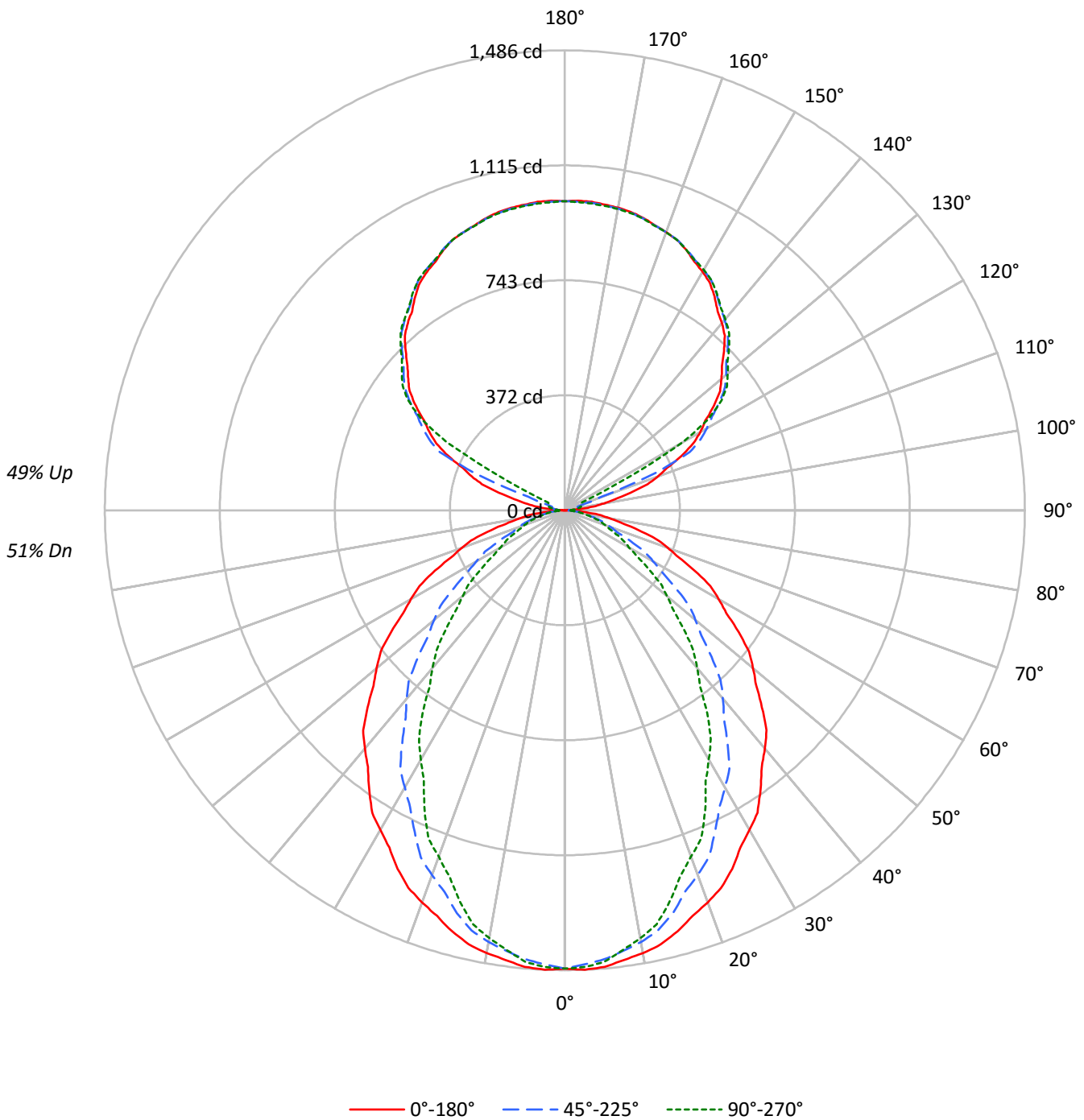
Input Watts (W): 54.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	84	84	84	70	70	70	57	57	57	51	51	51	51	
1	98	94	91	87	91	87	84	81	74	72	70	62	61	59	51	50	49	44	44	44	44	
2	90	83	77	72	83	77	72	68	66	62	59	55	53	50	46	44	42	38	38	38	38	
3	82	73	66	61	76	68	62	57	58	54	50	49	46	43	41	38	36	32	32	32	32	
4	76	65	58	52	70	61	54	49	52	47	43	44	40	37	37	34	32	28	28	28	28	
5	70	58	50	45	64	54	47	42	47	42	37	40	36	33	33	30	28	25	25	25	25	
6	64	53	45	39	59	49	42	37	42	37	33	36	32	29	31	27	25	22	22	22	22	
7	60	48	40	34	55	45	38	33	39	33	29	33	29	26	28	25	22	20	20	20	20	
8	55	43	36	31	51	41	34	29	35	30	26	30	26	23	26	23	20	18	18	18	18	
9	52	40	32	27	48	37	31	26	33	27	23	28	24	21	24	21	18	16	16	16	16	
10	48	37	29	25	45	34	28	24	30	25	21	26	22	19	22	19	17	15	15	15	15	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	23909	23909	23909
5°	24000	23608	23738
10°	23815	23222	23023
15°	23542	22534	21884
20°	23163	21551	20469
25°	22775	20436	19099
30°	22236	19287	17339
35°	21711	18039	15794
40°	21182	16750	14010
45°	20562	15299	12392
50°	19926	13835	10803
55°	19277	12262	9278
60°	18519	10601	7702
65°	17662	8909	7014
70°	16636	7336	6449
75°	15384	6687	6014
80°	13575	5979	5486
85°	10689	4705	4705



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.6	2.3
10°-20°	380.6	6.4
20°-30°	534.4	8.9
30°-40°	582.7	9.8
40°-50°	535.8	9.0
50°-60°	420.8	7.0
60°-70°	274.4	4.6
70°-80°	141.5	2.4
80°-90°	39.2	0.7
90°-100°	33.3	0.6
100°-110°	122.1	2.0
110°-120°	326.4	5.5
120°-130°	538.9	9.0
130°-140°	573.1	9.6
140°-150°	532.7	8.9
150°-160°	428.3	7.2
160°-170°	276.0	4.6
170°-180°	95.0	1.6
0°-30°	1053.6	17.6
0°-40°	1636.3	27.4
0°-60°	2593.0	43.4
0°-90°	3047.9	51.0
90°-120°	481.9	8.1
90°-150°	2126.5	35.6
90°-180°	2926.0	49.0
0°-180°	5973.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1481	1481	1481	1481	1481	
5°	1481	1473	1457	1468	1465	140
15°	1408	1392	1348	1323	1309	397
25°	1278	1233	1147	1094	1072	588
35°	1102	1030	915	834	801	689
45°	900	808	670	578	543	695
55°	685	578	436	358	330	612
65°	462	353	233	190	184	458
75°	247	155	107	98	96	261
85°	58	31	25	25	25	68
90°	1	9	14	18	20	5
95°	47	25	28	32	31	57
105°	220	229	44	52	55	235
115°	415	428	446	127	59	409
125°	587	597	610	615	618	523
135°	727	738	745	752	750	561
145°	843	843	854	859	856	527
155°	928	923	930	934	929	428
165°	978	974	976	980	976	276
175°	1000	996	997	1001	995	95
180°	998	998	998	998	998	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8
2.5°	1486.1	1484.9	1483.7	1482.5	1481.4	1479.5	1476.8	1474.2	1471.6	1468.9	1471.4
5°	1480.8	1479.3	1477.7	1476.2	1474.8	1472.1	1468.2	1464.4	1460.5	1456.6	1459.3
7.5°	1465.4	1463.6	1461.8	1460.0	1458.0	1454.9	1450.4	1445.8	1441.3	1436.7	1437.5
10°	1452.6	1450.5	1448.4	1446.3	1444.2	1440.3	1434.3	1428.4	1422.4	1416.4	1415.5
12.5°	1436.5	1433.9	1431.4	1428.9	1426.2	1421.2	1413.5	1405.9	1398.3	1390.7	1389.1
15°	1408.4	1405.1	1401.8	1398.6	1395.2	1388.6	1378.5	1368.4	1358.2	1348.1	1342.4
17.5°	1373.8	1368.8	1363.8	1358.8	1353.8	1344.8	1331.8	1318.8	1305.9	1292.8	1286.2
20°	1348.1	1342.1	1336.2	1330.2	1324.2	1313.8	1298.9	1284.0	1269.2	1254.3	1246.8
22.5°	1320.2	1313.5	1306.9	1300.2	1293.5	1281.8	1265.0	1248.2	1231.4	1214.6	1205.0
25°	1278.4	1268.9	1259.3	1249.8	1240.3	1225.7	1206.0	1186.4	1166.7	1147.1	1134.9
27.5°	1228.0	1217.6	1207.3	1196.9	1186.6	1170.3	1148.1	1126.0	1103.8	1081.7	1067.4
30°	1192.7	1181.3	1170.0	1158.7	1147.4	1129.8	1106.0	1082.2	1058.3	1034.5	1019.4
32.5°	1158.3	1145.1	1131.9	1118.6	1105.4	1086.7	1062.4	1038.0	1013.8	989.5	972.2
35°	1101.5	1086.3	1071.2	1055.9	1040.8	1020.1	993.8	967.7	941.5	915.2	896.5
37.5°	1044.7	1028.0	1011.4	994.6	978.0	955.6	927.8	899.8	871.9	843.9	823.2
40°	1005.0	987.1	969.3	951.4	933.5	910.2	881.3	852.4	823.5	794.7	773.5
42.5°	964.3	945.4	926.7	907.9	889.0	864.6	834.9	805.0	775.2	745.3	723.5
45°	900.5	880.5	860.6	840.6	820.7	795.1	763.9	732.6	701.3	670.0	648.8
47.5°	838.3	817.2	796.1	774.9	753.8	727.0	694.8	662.5	630.2	597.9	576.9
50°	793.3	772.1	751.0	729.8	708.7	681.8	649.0	616.2	583.5	550.8	530.2
52.5°	749.3	727.2	705.2	683.1	661.0	633.9	601.9	569.8	537.8	505.7	485.8
55°	684.8	661.6	638.3	615.1	591.9	564.1	532.0	499.8	467.7	435.6	417.7
57.5°	618.5	594.7	570.9	547.0	523.3	495.9	464.9	434.0	403.1	372.2	355.9
60°	573.5	549.7	525.9	502.1	478.3	451.0	420.3	389.6	359.0	328.3	313.2
62.5°	529.6	505.7	481.9	458.1	434.2	407.8	378.5	349.3	320.0	290.7	276.3
65°	462.3	438.2	414.0	389.9	365.9	340.3	313.6	286.8	259.9	233.2	223.1
67.5°	397.5	373.5	349.6	325.6	301.6	277.6	253.6	229.4	205.3	181.2	176.5
70°	352.4	329.2	306.0	282.8	259.5	237.6	217.1	196.5	176.0	155.4	152.5
72.5°	309.5	287.3	265.0	242.8	220.5	201.1	184.6	168.0	151.6	135.1	132.6
75°	246.6	225.7	204.9	184.0	163.2	147.7	137.5	127.4	117.3	107.2	105.1
77.5°	184.7	166.3	148.0	129.8	111.5	100.0	95.0	90.2	85.3	80.4	79.2
80°	146.0	130.9	115.7	100.5	85.3	76.2	73.2	70.3	67.3	64.3	63.1
82.5°	110.7	98.9	86.9	75.1	63.3	56.4	54.3	52.3	50.3	48.3	47.6
85°	57.7	51.4	45.1	38.9	32.6	29.1	28.2	27.3	26.4	25.4	25.4
87.5°	17.3	15.8	14.2	12.6	11.1	10.4	10.7	10.9	11.2	11.5	11.4
90°	0.7	2.5	4.2	6.1	7.8	9.3	10.6	11.9	13.1	14.4	15.2
92.5°	14.5	14.4	14.2	14.1	13.9	14.2	14.8	15.5	16.2	16.8	17.2
95°	47.0	41.7	36.4	31.1	25.8	23.6	24.8	26.0	27.1	28.2	29.0
97.5°	93.2	78.3	63.3	48.4	33.4	27.3	29.9	32.5	35.1	37.7	38.4
100°	127.8	105.8	83.9	61.9	39.9	30.3	33.0	35.7	38.5	41.2	42.4
102.5°	166.0	161.4	156.7	152.1	147.3	133.6	110.8	88.0	65.1	42.3	44.0
105°	219.6	224.4	229.2	234.1	238.8	219.3	175.5	131.7	87.9	44.0	45.8
107.5°	280.7	284.6	288.5	292.4	296.3	272.0	219.3	166.8	114.2	61.7	59.9
110°	320.0	323.4	326.8	330.1	333.5	311.9	265.6	219.2	172.8	126.4	110.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	357.0	360.0	362.9	366.0	368.9	364.7	353.3	341.7	330.3	318.8	260.3
115°	415.4	418.1	420.8	423.5	426.3	429.7	433.6	437.7	441.7	445.8	371.4
117.5°	467.6	470.6	473.6	476.7	479.7	482.6	485.4	488.2	490.9	493.7	475.7
120°	505.6	508.1	510.5	512.9	515.3	518.0	520.9	523.7	526.6	529.5	531.4
122.5°	538.1	540.6	543.1	545.6	548.2	551.0	554.2	557.3	560.5	563.6	564.7
125°	587.3	589.4	591.5	593.6	595.6	598.2	601.3	604.3	607.3	610.5	611.6
127.5°	632.0	634.3	636.6	638.8	641.2	643.5	645.8	648.0	650.4	652.6	654.3
130°	660.2	662.9	665.4	667.9	670.6	672.7	674.5	676.2	678.0	679.7	681.6
132.5°	689.1	691.4	693.6	695.7	697.9	699.8	701.7	703.4	705.2	706.9	708.4
135°	726.7	729.3	731.8	734.5	737.0	739.0	740.4	741.8	743.4	744.8	746.4
137.5°	764.8	766.5	768.3	770.1	771.9	773.7	775.3	776.9	778.5	780.2	781.7
140°	789.6	790.8	792.1	793.5	794.7	796.3	798.0	799.8	801.5	803.3	804.8
142.5°	810.4	811.5	812.7	813.9	815.0	816.6	818.6	820.6	822.6	824.7	826.0
145°	843.0	842.8	842.7	842.5	842.4	843.6	846.4	849.1	851.8	854.5	855.8
147.5°	871.5	870.9	870.3	869.7	869.1	870.1	872.8	875.5	878.2	880.9	881.7
150°	890.0	888.9	887.8	886.7	885.4	886.3	888.8	891.3	893.9	896.5	897.5
152.5°	905.5	904.3	903.1	901.8	900.6	901.2	903.6	906.1	908.5	910.9	911.9
155°	928.3	926.9	925.3	923.9	922.5	922.7	924.6	926.6	928.5	930.4	931.4
157.5°	946.0	944.8	943.6	942.4	941.2	941.2	942.6	943.9	945.2	946.6	947.8
160°	956.4	955.4	954.5	953.5	952.6	952.6	953.5	954.5	955.4	956.4	957.5
162.5°	965.7	964.7	963.8	962.8	961.8	961.8	962.6	963.4	964.3	965.1	966.2
165°	978.2	977.1	976.2	975.2	974.2	974.0	974.5	975.0	975.4	975.9	977.0
167.5°	987.3	986.4	985.4	984.5	983.5	983.2	983.7	984.1	984.6	985.0	986.1
170°	992.6	991.6	990.7	989.7	988.8	988.4	988.8	989.1	989.4	989.7	990.8
172.5°	996.0	995.0	994.1	993.1	992.2	991.9	992.2	992.5	992.8	993.1	994.3
175°	1000.5	999.4	998.3	997.1	996.0	995.6	995.9	996.2	996.5	996.9	998.0
177.5°	1001.3	1000.4	999.5	998.6	997.6	997.2	997.3	997.5	997.6	997.7	998.7
180°	998.4	998.4	998.4	998.4	998.4	998.4	998.4	998.4	998.4	998.4	998.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8	1480.8
2.5°	1473.7	1476.1	1478.4	1479.5	1478.9	1478.4	1478.0	1477.5
5°	1462.0	1464.6	1467.3	1468.2	1467.3	1466.4	1465.5	1464.6
7.5°	1438.4	1439.1	1439.9	1439.5	1437.9	1436.4	1434.8	1433.3
10°	1414.6	1413.7	1412.8	1411.5	1409.7	1408.0	1406.1	1404.3
12.5°	1387.5	1385.8	1384.2	1382.0	1379.0	1376.0	1373.0	1370.1
15°	1336.8	1331.1	1325.4	1321.1	1318.2	1315.1	1312.2	1309.2
17.5°	1279.4	1272.6	1266.0	1260.0	1254.9	1249.8	1244.7	1239.5
20°	1239.4	1231.9	1224.5	1217.5	1210.9	1204.4	1197.8	1191.3
22.5°	1195.5	1185.9	1176.3	1169.0	1164.2	1159.2	1154.4	1149.5
25°	1122.7	1110.4	1098.2	1089.8	1085.4	1081.0	1076.5	1072.1
27.5°	1053.2	1038.9	1024.7	1014.1	1007.0	999.9	992.8	985.7
30°	1004.1	989.0	973.7	962.1	954.1	946.0	938.1	930.0
32.5°	954.8	937.5	920.2	907.7	900.2	892.6	885.0	877.5
35°	877.7	859.0	840.2	827.6	821.0	814.5	807.9	801.3
37.5°	802.6	781.9	761.3	747.2	739.7	732.2	724.7	717.2
40°	752.3	731.2	710.0	695.6	687.9	680.1	672.4	664.7
42.5°	701.7	679.7	657.9	643.2	635.7	628.2	620.7	613.2
45°	627.7	606.6	585.4	571.3	564.1	557.0	549.9	542.7
47.5°	555.8	534.8	513.8	500.1	493.6	487.1	480.6	474.1
50°	509.7	489.1	468.6	455.1	448.9	442.6	436.4	430.1
52.5°	466.1	446.3	426.4	413.6	407.8	402.0	396.3	390.5
55°	399.8	381.9	364.1	352.2	346.6	340.9	335.3	329.6
57.5°	339.5	323.2	306.8	296.2	291.4	286.6	281.9	277.1
60°	297.9	282.8	267.5	257.6	252.8	248.0	243.3	238.5
62.5°	261.9	247.4	232.9	224.2	221.4	218.5	215.6	212.8
65°	212.9	202.8	192.7	187.1	186.2	185.4	184.5	183.6
67.5°	171.9	167.2	162.6	159.8	158.9	157.8	156.9	156.0
70°	149.5	146.5	143.5	141.5	140.3	139.1	137.8	136.6
72.5°	130.1	127.5	125.0	123.5	122.7	122.0	121.3	120.6
75°	103.0	101.0	98.9	97.7	97.4	97.0	96.7	96.4
77.5°	78.1	76.9	75.6	74.8	74.3	73.8	73.4	72.9
80°	61.9	60.8	59.6	59.0	59.0	59.0	59.0	59.0
82.5°	46.9	46.0	45.3	45.0	45.0	45.0	45.0	45.0
85°	25.4	25.4	25.4	25.4	25.4	25.4	25.4	25.4
87.5°	11.3	11.2	11.1	11.1	11.2	11.3	11.3	11.4
90°	16.1	16.9	17.7	18.2	18.6	18.9	19.2	19.5
92.5°	17.6	18.0	18.4	18.8	18.9	19.1	19.3	19.5
95°	29.8	30.6	31.4	31.7	31.5	31.4	31.2	31.1
97.5°	39.0	39.6	40.3	40.7	40.9	41.1	41.3	41.5
100°	43.7	45.0	46.4	47.2	47.5	47.8	48.1	48.4
102.5°	45.6	47.4	49.0	50.1	50.5	51.0	51.4	51.9
105°	47.6	49.4	51.1	52.3	53.0	53.6	54.2	54.9
107.5°	58.1	56.2	54.5	53.9	54.5	55.2	55.8	56.5
110°	94.3	78.3	62.2	54.5	55.1	55.7	56.5	57.1



TEST NUMBER: P331720-840

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	201.8	143.2	84.6	55.5	56.1	56.7	57.2	57.7
115°	297.1	222.8	148.5	105.4	93.9	82.3	70.8	59.3
117.5°	457.8	439.7	421.7	393.7	355.8	317.8	279.8	241.9
120°	533.4	535.3	537.2	527.4	505.6	484.0	462.3	440.7
122.5°	565.9	567.0	568.3	566.7	562.5	558.3	554.1	549.9
125°	612.7	613.8	614.9	615.7	616.2	616.7	617.1	617.6
127.5°	655.9	657.5	659.1	660.0	660.1	660.2	660.4	660.5
130°	683.3	685.1	686.8	687.6	687.5	687.3	687.1	687.0
132.5°	709.9	711.4	713.0	713.7	713.5	713.4	713.2	713.0
135°	748.0	749.6	751.2	751.8	751.5	751.2	750.8	750.5
137.5°	783.4	784.9	786.5	787.0	786.5	785.9	785.4	784.8
140°	806.2	807.6	809.1	809.4	808.6	807.8	807.0	806.2
142.5°	827.3	828.6	829.9	830.2	829.4	828.6	827.8	827.0
145°	856.9	858.0	859.1	859.2	858.5	857.7	856.9	856.1
147.5°	882.5	883.4	884.2	884.3	883.6	882.9	882.3	881.6
150°	898.4	899.4	900.3	900.4	899.6	898.8	898.0	897.2
152.5°	912.8	913.8	914.8	914.7	913.7	912.6	911.6	910.5
155°	932.4	933.3	934.3	934.1	932.8	931.6	930.3	929.0
157.5°	948.8	949.9	951.0	950.9	949.7	948.4	947.2	945.9
160°	958.4	959.4	960.3	960.2	959.1	958.0	956.8	955.7
162.5°	967.2	968.4	969.5	969.4	968.0	966.5	965.2	963.8
165°	978.2	979.4	980.5	980.5	979.4	978.2	977.0	975.9
167.5°	987.3	988.5	989.6	989.4	988.0	986.5	985.0	983.6
170°	991.9	993.0	994.2	994.0	992.6	991.1	989.7	988.3
172.5°	995.4	996.5	997.6	997.4	996.0	994.6	993.1	991.7
175°	999.2	1000.3	1001.4	1001.2	999.6	997.9	996.3	994.7
177.5°	999.6	1000.5	1001.4	1001.3	1000.1	999.0	997.7	996.6
180°	998.4	998.4	998.4	998.4	998.4	998.4	998.4	998.4

(END OF REPORT)