

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: P332649-940

Luminaire Tested: **SA4XXDIP-C1020D810U940-4F0-1E-UDD-F**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332649-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA4XXDIP-C1020D810U940-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 810 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6834.6 lumens  
Efficiency: N/A  
Efficacy: 125.6 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: General Diffuse

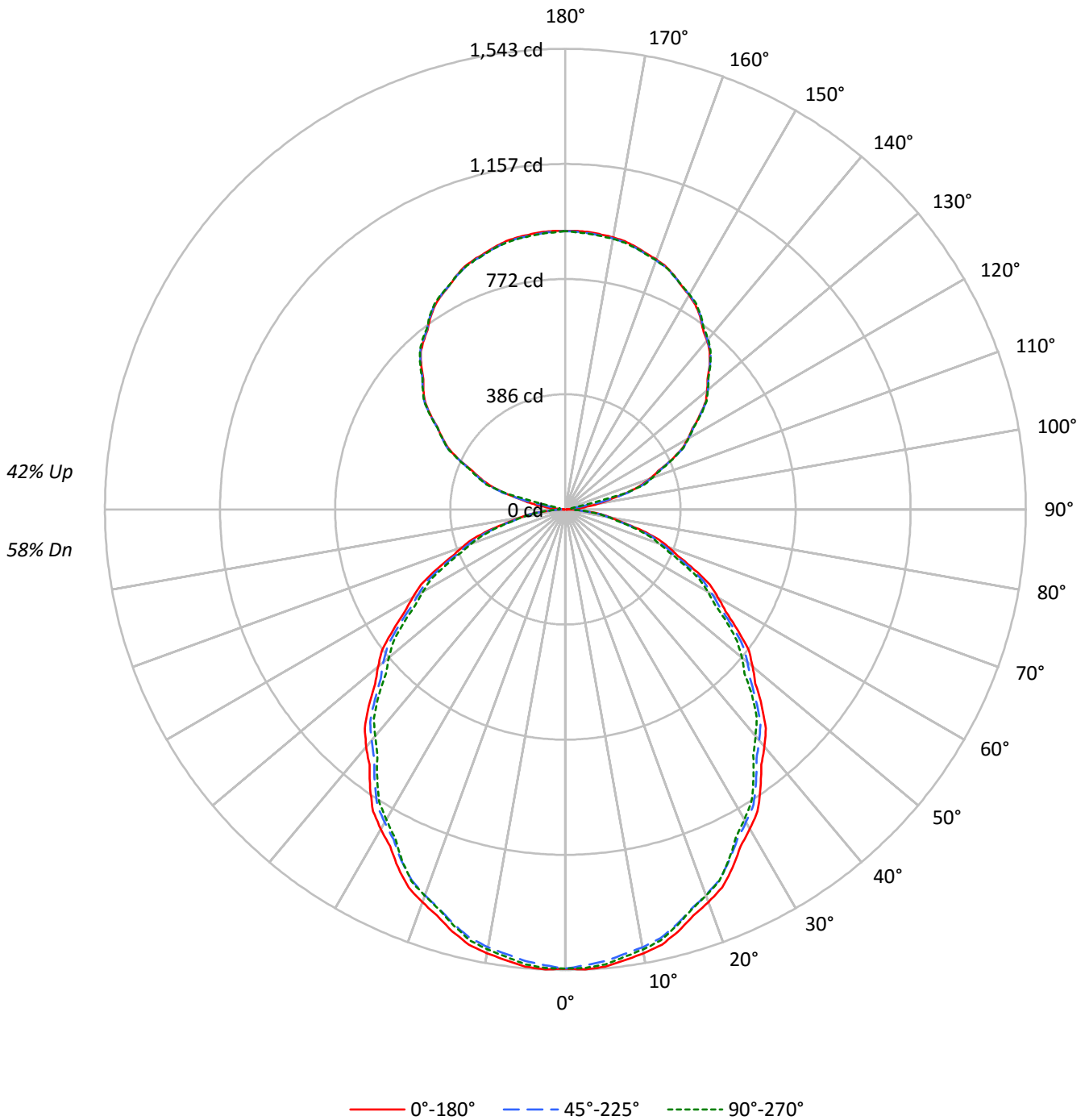
Input Watts (W): 54.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	109	109	109	109	102	102	102	102	88	88	88	75	75	75	63	63	63	58				58
1	99	95	91	88	93	89	85	82	77	74	72	66	64	62	56	55	53	49				49
2	91	83	77	72	84	78	72	67	67	63	60	58	55	52	49	47	45	41				41
3	83	73	66	60	77	68	62	56	59	54	50	51	47	44	44	41	38	34				34
4	76	65	57	50	70	61	53	48	53	47	43	46	41	38	39	36	33	30				30
5	69	58	49	43	64	54	47	41	47	41	37	41	36	33	35	32	29	26				26
6	64	52	44	38	59	49	41	36	43	37	32	37	32	29	32	28	25	23				23
7	59	47	39	33	55	44	37	31	39	33	28	34	29	25	29	25	23	20				20
8	55	43	35	29	51	40	33	28	35	29	25	31	26	23	27	23	20	18				18
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	25	21	18	16				16
10	48	36	28	23	45	34	27	22	30	24	21	26	22	19	23	19	17	15				15

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	12421	12421	12421
5°	12459	12309	12399
10°	12381	12209	12269
15°	12232	12035	12066
20°	12032	11820	11832
25°	11805	11575	11541
30°	11527	11286	11182
35°	11239	10984	10838
40°	10940	10642	10446
45°	10628	10304	10106
50°	10282	10003	9693
55°	9909	9614	9301
60°	9536	9177	8898
65°	9116	8760	8407
70°	8641	8207	7886
75°	7923	7539	7346
80°	7053	6760	6592
85°	6169	5937	5826



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	144.9	2.1
10°-20°	408.3	6.0
20°-30°	600.9	8.8
30°-40°	698.6	10.2
40°-50°	698.6	10.2
50°-60°	611.1	8.9
60°-70°	453.8	6.6
70°-80°	257.8	3.8
80°-90°	77.1	1.1
90°-100°	31.9	0.5
100°-110°	203.3	3.0
110°-120°	388.9	5.7
120°-130°	493.7	7.2
130°-140°	528.2	7.7
140°-150°	493.9	7.2
150°-160°	398.3	5.8
160°-170°	256.9	3.8
170°-180°	88.5	1.3
0°-30°	1154.1	16.9
0°-40°	1852.6	27.1
0°-60°	3162.3	46.3
0°-90°	3951.1	57.8
90°-120°	624.1	9.1
90°-150°	2139.8	31.3
90°-180°	2884.0	42.2
0°-180°	6834.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1539	1539	1539	1539	1539	
5°	1537	1532	1519	1532	1530	146
15°	1464	1458	1440	1447	1444	412
25°	1325	1316	1300	1300	1296	609
35°	1140	1131	1114	1106	1100	713
45°	931	922	902	889	885	717
55°	704	700	683	669	661	630
65°	477	471	459	447	440	472
75°	254	248	242	237	236	270
85°	67	66	64	64	63	73
90°	2	10	15	19	21	5
95°	38	16	15	19	20	49
105°	210	214	218	222	199	220
115°	392	394	393	395	395	385
125°	551	553	552	554	555	492
135°	683	683	685	687	688	526
145°	788	790	790	791	792	492
155°	864	864	862	865	863	398
165°	911	908	908	913	907	257
175°	932	928	929	934	927	89
180°	932	932	932	932	932	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6
2.5°	1542.6	1541.9	1541.2	1540.6	1540.0	1538.4	1536.0	1533.6	1531.2	1528.7	1531.0
5°	1537.4	1536.3	1535.3	1534.1	1533.0	1531.0	1527.9	1524.9	1522.0	1518.9	1522.0
7.5°	1523.1	1522.0	1520.9	1519.8	1518.8	1516.5	1513.1	1509.8	1506.5	1503.2	1505.6
10°	1510.3	1509.2	1508.1	1507.0	1505.9	1503.6	1500.0	1496.5	1492.9	1489.3	1491.5
12.5°	1493.5	1492.5	1491.3	1490.2	1489.2	1486.7	1482.9	1479.2	1475.3	1471.6	1474.0
15°	1463.5	1462.3	1461.2	1460.2	1459.0	1456.4	1452.3	1448.2	1444.1	1440.0	1441.6
17.5°	1427.2	1425.8	1424.4	1423.1	1421.7	1419.1	1415.1	1411.3	1407.4	1403.6	1404.5
20°	1400.5	1399.2	1397.8	1396.4	1395.1	1392.3	1388.2	1384.1	1380.0	1375.9	1376.7
22.5°	1372.0	1370.1	1368.3	1366.5	1364.8	1361.7	1357.6	1353.5	1349.4	1345.3	1346.8
25°	1325.3	1323.5	1321.5	1319.6	1317.7	1314.8	1311.0	1307.2	1303.3	1299.5	1299.8
27.5°	1272.1	1270.2	1268.1	1266.1	1264.2	1261.4	1257.8	1254.3	1250.7	1247.1	1246.5
30°	1236.6	1234.4	1232.2	1230.0	1227.8	1224.9	1221.4	1217.8	1214.2	1210.7	1209.6
32.5°	1199.1	1197.1	1195.2	1193.2	1191.2	1188.3	1184.5	1180.8	1177.0	1173.2	1171.9
35°	1140.4	1138.5	1136.6	1134.7	1132.7	1129.9	1126.1	1122.2	1118.4	1114.5	1112.6
37.5°	1078.5	1076.7	1075.0	1073.3	1071.5	1068.6	1064.4	1060.3	1056.2	1052.1	1050.1
40°	1038.1	1035.9	1033.7	1031.5	1029.3	1026.2	1022.1	1018.0	1013.9	1009.8	1007.0
42.5°	994.7	993.4	992.0	990.8	989.4	986.5	982.0	977.4	972.9	968.3	965.1
45°	930.9	928.9	927.0	925.1	923.2	920.0	915.6	911.2	906.9	902.5	899.5
47.5°	864.0	862.7	861.4	860.1	858.7	856.0	852.0	847.9	843.9	839.8	836.4
50°	818.7	817.5	816.5	815.4	814.2	811.8	808.0	804.1	800.3	796.5	792.6
52.5°	774.3	772.9	771.6	770.3	769.0	766.3	762.2	758.2	754.1	750.1	746.7
55°	704.0	703.1	702.3	701.5	700.7	698.4	694.6	690.7	686.9	683.1	679.8
57.5°	636.9	636.0	635.1	634.1	633.2	630.8	627.1	623.3	619.5	615.7	612.6
60°	590.6	589.2	587.8	586.5	585.1	582.6	579.1	575.5	571.9	568.4	565.9
62.5°	545.2	544.0	542.9	541.7	540.6	538.1	534.3	530.6	526.7	523.0	520.8
65°	477.2	475.7	474.4	473.1	471.6	469.6	466.8	464.1	461.4	458.6	455.9
67.5°	408.6	407.3	406.1	404.8	403.5	401.6	399.0	396.4	393.7	391.1	388.4
70°	366.1	364.3	362.3	360.4	358.5	356.4	354.3	352.0	349.9	347.7	345.4
72.5°	320.8	318.9	317.0	315.0	313.2	311.3	309.5	307.8	306.0	304.3	302.6
75°	254.0	252.6	251.2	249.9	248.5	247.1	245.8	244.4	243.0	241.7	240.6
77.5°	190.1	189.5	188.9	188.3	187.7	186.8	185.6	184.4	183.2	182.0	181.6
80°	151.7	150.8	150.0	149.2	148.4	147.7	147.1	146.6	146.1	145.4	144.9
82.5°	114.1	113.8	113.4	113.0	112.6	112.4	112.3	112.2	112.1	111.9	111.6
85°	66.6	66.6	66.6	66.6	66.6	66.3	65.7	65.2	64.6	64.1	64.1
87.5°	26.0	26.2	26.3	26.4	26.6	26.7	26.7	26.7	26.8	26.8	26.9
90°	2.1	3.8	5.5	7.2	8.9	10.3	11.6	12.8	14.1	15.3	16.2
92.5°	8.8	8.9	9.0	9.1	9.2	9.8	11.1	12.3	13.6	14.8	15.7
95°	38.3	33.1	27.8	22.6	17.3	14.7	14.9	15.1	15.2	15.3	16.2
97.5°	81.4	84.7	88.0	91.3	94.6	87.6	70.3	53.0	35.7	18.4	18.5
100°	114.3	117.2	119.9	122.7	125.5	116.2	94.8	73.5	52.1	30.7	28.0
102.5°	151.1	153.2	155.2	157.3	159.3	159.0	156.1	153.4	150.6	147.8	119.4
105°	209.8	210.8	211.7	212.7	213.6	214.5	215.2	216.0	216.8	217.5	218.9
107.5°	264.4	264.8	265.3	265.8	266.3	267.0	268.0	269.1	270.2	271.3	271.9
110°	301.2	301.7	302.1	302.6	303.1	303.7	304.7	305.6	306.6	307.5	307.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	336.9	337.7	338.6	339.4	340.3	340.9	341.3	341.7	342.1	342.6	342.6
115°	391.8	392.3	392.8	393.2	393.7	393.9	393.7	393.5	393.4	393.2	393.5
117.5°	441.3	441.9	442.6	443.2	443.8	444.3	444.6	445.0	445.3	445.7	445.6
120°	474.8	475.5	476.1	476.7	477.2	477.5	477.3	477.2	477.1	476.9	477.2
122.5°	506.0	506.4	506.8	507.1	507.6	507.8	508.0	508.3	508.5	508.7	508.9
125°	550.8	551.4	552.1	552.7	553.3	553.4	553.1	552.9	552.5	552.2	552.7
127.5°	593.2	593.3	593.5	593.7	593.8	594.2	594.9	595.7	596.4	597.1	597.0
130°	620.5	620.7	620.8	621.0	621.2	621.4	621.9	622.4	622.9	623.3	623.5
132.5°	645.6	645.9	646.2	646.5	646.8	647.2	647.7	648.4	648.9	649.5	649.7
135°	683.3	683.1	683.0	682.8	682.7	682.9	683.5	684.1	684.7	685.4	685.6
137.5°	716.6	716.7	716.8	716.8	716.8	717.2	717.9	718.6	719.3	720.0	720.3
140°	738.3	738.7	739.0	739.3	739.6	739.9	740.2	740.6	740.8	741.1	741.6
142.5°	757.9	758.4	759.0	759.6	760.1	760.5	760.6	760.9	761.1	761.3	761.6
145°	787.8	788.4	788.8	789.3	789.7	790.0	790.0	790.0	790.0	790.0	790.1
147.5°	811.7	812.6	813.4	814.3	815.2	815.6	815.4	815.2	815.0	814.9	815.0
150°	829.0	829.6	830.3	830.9	831.4	831.7	831.5	831.4	831.3	831.1	831.1
152.5°	843.5	844.0	844.5	845.0	845.5	845.6	845.3	845.1	844.7	844.5	844.7
155°	863.9	864.0	864.2	864.3	864.5	864.3	863.9	863.4	862.9	862.5	863.1
157.5°	881.0	880.9	880.8	880.7	880.7	880.3	879.8	879.3	878.8	878.2	879.0
160°	891.1	890.6	890.1	889.7	889.2	888.9	888.8	888.6	888.4	888.2	889.2
162.5°	900.0	899.4	898.8	898.2	897.6	897.2	897.1	897.0	896.8	896.6	897.6
165°	911.2	910.5	909.7	908.9	908.2	907.8	907.8	907.8	907.8	907.8	909.0
167.5°	920.2	919.4	918.6	917.7	916.9	916.5	916.4	916.3	916.2	916.1	917.5
170°	925.2	924.3	923.4	922.4	921.5	921.1	921.2	921.4	921.6	921.8	922.9
172.5°	928.5	927.6	926.7	925.8	924.9	924.4	924.6	924.8	924.9	925.1	926.3
175°	932.2	931.2	930.3	929.4	928.4	928.1	928.3	928.4	928.5	928.7	930.1
177.5°	933.9	933.0	932.1	931.2	930.4	930.1	930.3	930.6	930.9	931.0	932.0
180°	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6	1538.6
2.5°	1533.1	1535.3	1537.6	1538.6	1538.3	1538.1	1537.8	1537.7
5°	1524.9	1527.9	1531.0	1532.2	1531.7	1531.1	1530.5	1530.0
7.5°	1508.0	1510.4	1512.8	1513.9	1513.5	1513.1	1512.8	1512.5
10°	1493.7	1495.9	1498.1	1498.9	1498.3	1497.8	1497.3	1496.7
12.5°	1476.4	1478.8	1481.2	1482.0	1481.3	1480.5	1479.7	1479.0
15°	1443.3	1444.9	1446.6	1447.0	1446.2	1445.4	1444.6	1443.7
17.5°	1405.6	1406.7	1407.7	1407.9	1407.4	1406.9	1406.3	1405.7
20°	1377.5	1378.4	1379.2	1379.3	1378.8	1378.2	1377.7	1377.2
22.5°	1348.3	1349.8	1351.2	1351.5	1350.5	1349.5	1348.5	1347.6
25°	1300.0	1300.3	1300.6	1300.1	1299.0	1298.0	1296.8	1295.7
27.5°	1245.9	1245.2	1244.6	1243.6	1242.2	1240.8	1239.4	1238.1
30°	1208.5	1207.4	1206.3	1205.1	1203.7	1202.3	1201.0	1199.6
32.5°	1170.5	1169.3	1168.0	1166.6	1165.2	1163.9	1162.5	1161.1
35°	1110.7	1108.8	1106.9	1105.2	1103.8	1102.5	1101.1	1099.7
37.5°	1047.9	1045.9	1043.8	1041.9	1040.1	1038.2	1036.4	1034.7
40°	1004.2	1001.5	998.8	996.8	995.3	994.0	992.7	991.2
42.5°	962.0	958.8	955.6	953.5	952.6	951.6	950.7	949.9
45°	896.4	893.4	890.4	888.5	887.7	886.9	886.0	885.2
47.5°	833.0	829.6	826.3	823.5	821.4	819.3	817.3	815.2
50°	788.8	785.0	781.1	778.4	776.7	775.1	773.5	771.8
52.5°	743.3	739.9	736.5	733.8	731.6	729.6	727.5	725.4
55°	676.5	673.2	669.9	667.4	665.8	664.1	662.5	660.8
57.5°	609.5	606.4	603.2	600.8	599.2	597.7	596.1	594.5
60°	563.5	561.0	558.5	556.6	555.2	553.8	552.5	551.1
62.5°	518.5	516.2	514.0	512.2	510.9	509.4	508.1	506.8
65°	453.2	450.4	447.6	445.6	444.3	442.9	441.5	440.1
67.5°	385.8	383.2	380.6	379.1	378.6	378.3	377.9	377.6
70°	343.3	341.1	338.9	337.4	336.6	335.7	334.9	334.1
72.5°	300.8	299.0	297.3	296.0	295.2	294.4	293.6	292.7
75°	239.4	238.4	237.3	236.6	236.3	236.0	235.8	235.5
77.5°	181.3	181.0	180.7	180.1	179.4	178.7	178.0	177.3
80°	144.4	143.8	143.3	142.9	142.6	142.3	142.0	141.8
82.5°	111.3	110.9	110.7	110.3	110.0	109.8	109.5	109.2
85°	64.1	64.1	64.1	63.9	63.7	63.4	63.1	62.9
87.5°	27.1	27.3	27.5	27.6	27.6	27.7	27.8	27.8
90°	17.2	18.1	19.1	19.7	20.0	20.3	20.6	21.0
92.5°	16.7	17.6	18.5	19.0	19.1	19.1	19.2	19.3
95°	17.2	18.1	19.1	19.6	19.8	19.9	20.1	20.2
97.5°	18.6	18.7	18.8	18.9	19.1	19.2	19.4	19.5
100°	25.4	22.7	20.2	18.9	19.1	19.2	19.4	19.5
102.5°	91.0	62.6	34.2	20.0	20.0	20.0	20.1	20.1
105°	220.3	221.7	223.1	221.1	215.4	209.8	204.3	198.7
107.5°	272.6	273.2	273.9	274.6	275.2	275.7	276.3	277.0
110°	308.1	308.4	308.7	309.1	309.6	310.0	310.5	310.9





TEST NUMBER: P332649-940

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	342.5	342.4	342.3	342.6	343.2	343.8	344.4	345.0
115°	393.9	394.1	394.5	394.7	394.7	394.7	394.7	394.7
117.5°	445.5	445.5	445.4	445.3	445.3	445.2	445.1	445.1
120°	477.5	477.9	478.1	478.1	477.9	477.5	477.2	476.9
122.5°	509.1	509.3	509.4	509.3	509.1	508.7	508.5	508.1
125°	553.1	553.6	554.0	554.4	554.6	554.6	554.8	555.0
127.5°	596.9	596.8	596.7	596.6	596.5	596.4	596.3	596.1
130°	623.7	623.8	623.9	624.0	624.0	624.0	624.0	624.0
132.5°	649.9	650.0	650.1	650.1	650.1	649.9	649.8	649.7
135°	686.0	686.3	686.6	686.9	687.2	687.5	687.9	688.1
137.5°	720.6	720.9	721.3	721.4	721.3	721.2	721.1	721.0
140°	742.1	742.5	743.0	743.3	743.5	743.6	743.8	744.0
142.5°	761.9	762.2	762.6	762.8	762.8	762.9	762.9	762.9
145°	790.2	790.4	790.6	790.8	791.1	791.4	791.8	792.0
147.5°	815.2	815.3	815.4	815.6	815.7	815.8	816.0	816.2
150°	831.1	831.1	831.1	831.2	831.3	831.4	831.6	831.8
152.5°	845.0	845.3	845.4	845.5	845.4	845.3	845.3	845.2
155°	863.7	864.3	865.0	865.0	864.5	864.1	863.6	863.2
157.5°	879.9	880.7	881.5	881.5	880.7	879.9	879.0	878.2
160°	890.1	891.1	892.0	892.0	891.1	890.1	889.2	888.2
162.5°	898.5	899.4	900.4	900.3	899.2	898.1	897.2	896.1
165°	910.3	911.5	912.8	912.7	911.2	909.9	908.5	907.0
167.5°	918.9	920.2	921.6	921.5	920.0	918.4	916.9	915.3
170°	924.2	925.4	926.7	926.5	925.0	923.5	921.9	920.3
172.5°	927.6	928.8	930.1	929.8	928.2	926.5	924.8	923.1
175°	931.5	932.9	934.2	934.1	932.2	930.3	928.4	926.6
177.5°	933.1	934.1	935.0	934.8	933.3	931.8	930.3	928.8
180°	932.2	932.2	932.2	932.2	932.2	932.2	932.2	932.2

(END OF REPORT)