

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: P331400-840

Luminaire Tested: **SA2XXDIP-C865D725U840-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331400-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C865D725U840-4F0-1E-UDD-F1  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 725 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6164.8 lumens  
Efficiency: N/A  
Efficacy: 113.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

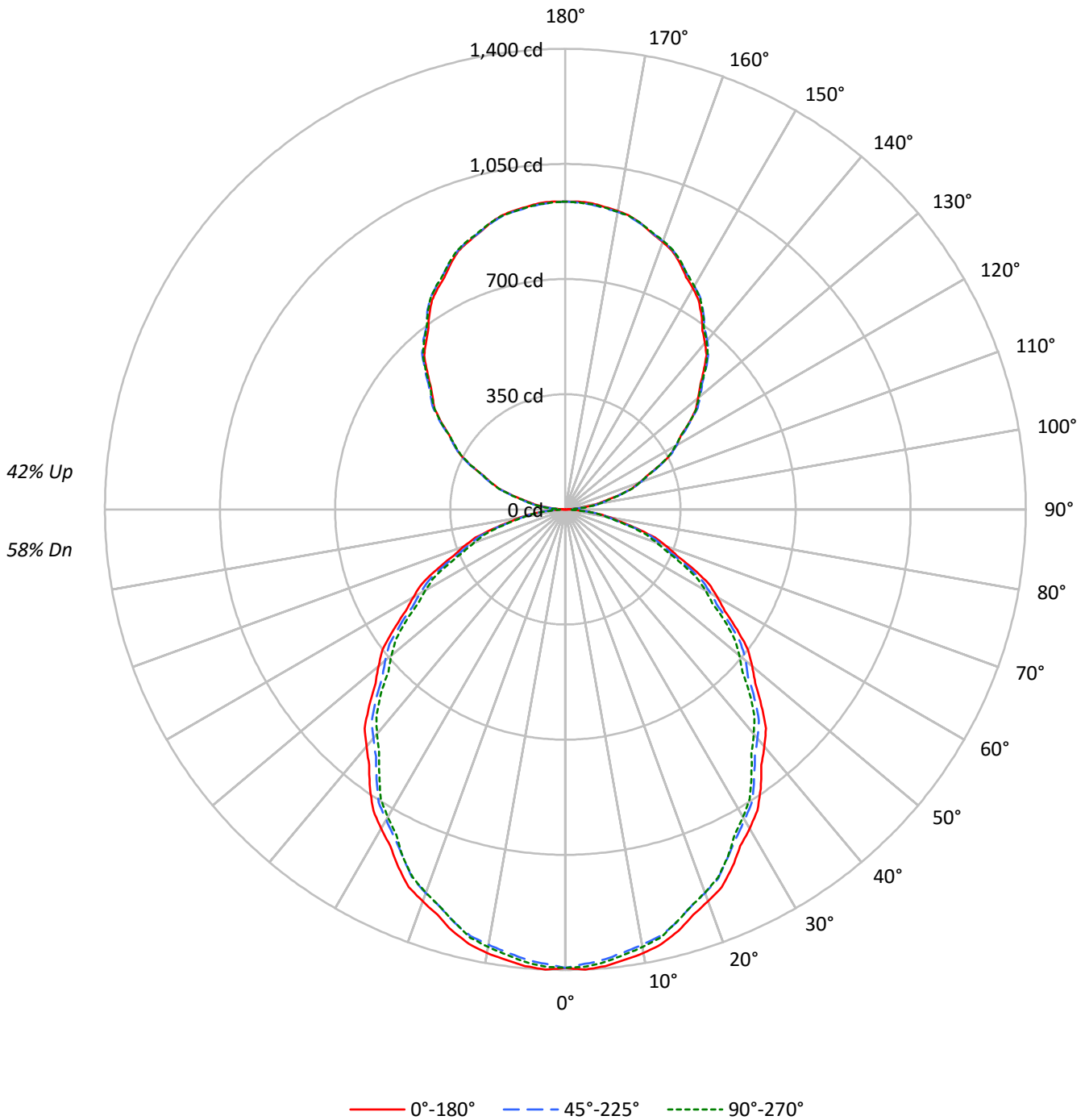
Input Watts (W): 54.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									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	101	101	101	101	88	88	88	75	75	75	63	63	63	58																			
1	99	95	91	88	92	89	85	82	77	74	72	66	64	62	56	54	53	48																			
2	91	83	77	72	84	78	72	67	67	63	60	58	55	52	49	47	45	41																			
3	83	73	66	60	77	68	62	56	59	54	50	51	47	44	43	41	38	34																			
4	76	65	57	51	70	61	53	48	53	47	43	46	41	38	39	36	33	30																			
5	69	58	49	43	64	54	47	41	47	41	37	41	36	33	35	32	29	26																			
6	64	52	44	38	59	49	41	36	43	37	32	37	32	29	32	28	25	23																			
7	59	47	39	33	55	44	37	32	39	33	28	34	29	25	29	25	23	20																			
8	55	43	35	29	51	40	33	28	35	30	25	31	26	23	27	23	20	18																			
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	25	21	18	16																			
10	48	36	28	24	45	34	27	23	30	24	21	26	22	19	23	19	17	15																			

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

	0°	45°	90°
0°	22501	22501	22501
5°	22587	22261	22392
10°	22453	22035	22146
15°	22176	21750	21727
20°	21782	21321	21297
25°	21389	20794	20794
30°	20885	20310	20137
35°	20416	19730	19438
40°	19827	19150	18782
45°	19244	18573	18114
50°	18613	17975	17334
55°	17954	17275	16636
60°	17221	16443	15839
65°	16435	15614	14896
70°	15437	14611	13917
75°	14042	13456	13125
80°	12459	12087	11464
85°	10170	9689	8688



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	131.0	2.1
10°-20°	368.7	6.0
20°-30°	542.0	8.8
30°-40°	629.6	10.2
40°-50°	628.9	10.2
50°-60°	548.4	8.9
60°-70°	405.5	6.6
70°-80°	229.7	3.7
80°-90°	65.5	1.1
90°-100°	59.3	1.0
100°-110°	184.1	3.0
110°-120°	314.7	5.1
120°-130°	413.8	6.7
130°-140°	464.4	7.5
140°-150°	455.4	7.4
150°-160°	382.0	6.2
160°-170°	253.3	4.1
170°-180°	88.5	1.4
0°-30°	1041.8	16.9
0°-40°	1671.3	27.1
0°-60°	2848.6	46.2
0°-90°	3549.3	57.6
90°-120°	558.0	9.1
90°-150°	1891.7	30.7
90°-180°	2616.0	42.4
0°-180°	6164.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1394	1394	1394	1394	1394	
5°	1394	1388	1374	1384	1382	132
15°	1327	1318	1301	1306	1300	373
25°	1201	1189	1167	1170	1167	552
35°	1036	1022	1001	993	986	646
45°	843	833	813	799	793	650
55°	638	629	614	598	591	570
65°	430	422	409	397	390	425
75°	225	222	216	208	210	240
85°	55	54	52	48	47	63
90°	1	11	28	26	27	5
95°	41	49	50	50	49	47
105°	170	172	174	175	175	179
115°	316	320	319	318	316	312
125°	459	466	464	462	461	410
135°	594	603	605	604	602	459
145°	721	727	732	732	729	451
155°	825	827	830	833	831	380
165°	898	897	897	902	898	253
175°	934	932	930	935	931	89
180°	935	935	935	935	935	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6
2.5°	1400.1	1398.9	1397.7	1396.5	1395.3	1393.4	1390.8	1388.2	1385.5	1382.9	1385.3
5°	1393.6	1392.4	1391.3	1390.1	1388.9	1386.6	1383.4	1380.1	1376.8	1373.5	1375.9
7.5°	1381.3	1379.5	1377.7	1375.7	1373.9	1371.3	1368.0	1364.6	1361.3	1358.0	1360.4
10°	1369.5	1367.5	1365.3	1363.2	1361.2	1358.4	1354.7	1351.2	1347.7	1344.0	1346.5
12.5°	1353.4	1351.6	1349.8	1347.9	1346.0	1343.3	1339.8	1336.2	1332.6	1329.1	1330.7
15°	1326.7	1324.8	1323.0	1321.3	1319.5	1316.7	1312.8	1308.9	1305.0	1301.2	1302.3
17.5°	1292.3	1290.5	1288.8	1287.0	1285.2	1282.3	1278.4	1274.4	1270.5	1266.6	1268.0
20°	1267.7	1265.9	1264.1	1262.3	1260.5	1257.6	1253.3	1249.2	1245.1	1240.9	1241.7
22.5°	1243.0	1240.5	1238.0	1235.5	1233.0	1229.8	1225.9	1221.9	1218.0	1214.1	1214.3
25°	1200.6	1198.3	1195.9	1193.6	1191.1	1187.4	1182.3	1177.3	1172.3	1167.2	1167.8
27.5°	1152.5	1150.3	1148.1	1146.0	1143.9	1140.7	1136.8	1132.8	1128.8	1124.8	1124.0
30°	1120.2	1117.9	1115.5	1113.2	1110.8	1107.3	1102.9	1098.4	1093.9	1089.4	1088.5
32.5°	1086.0	1084.1	1082.2	1080.3	1078.3	1075.0	1070.4	1065.6	1061.0	1056.2	1054.6
35°	1035.8	1032.9	1029.9	1026.9	1023.9	1020.1	1015.3	1010.6	1005.7	1001.0	999.3
37.5°	979.3	976.6	974.0	971.4	968.9	965.1	960.4	955.6	950.8	946.0	943.8
40°	940.7	938.4	935.9	933.5	931.2	927.6	922.8	918.1	913.3	908.6	905.8
42.5°	903.2	900.8	898.4	896.1	893.6	890.1	885.3	880.6	875.8	871.0	868.1
45°	842.8	840.8	838.7	836.7	834.6	831.2	826.8	822.3	817.9	813.4	810.1
47.5°	782.8	780.9	778.9	777.0	775.0	771.6	767.0	762.3	757.7	753.1	749.6
50°	741.0	739.5	738.1	736.6	735.1	732.3	728.1	723.9	719.7	715.6	711.4
52.5°	700.3	698.3	696.4	694.4	692.5	689.5	685.6	681.7	677.7	673.8	670.3
55°	637.8	636.1	634.3	632.5	630.7	628.0	624.5	620.9	617.3	613.7	610.2
57.5°	575.1	573.7	572.3	570.9	569.5	566.7	562.8	558.9	554.9	551.0	547.5
60°	533.3	532.1	531.0	529.8	528.6	525.9	521.7	517.6	513.4	509.2	505.9
62.5°	492.6	490.7	488.8	486.9	484.9	482.4	479.2	475.9	472.7	469.6	466.6
65°	430.2	428.4	426.6	424.7	423.0	420.6	417.7	414.7	411.7	408.7	406.1
67.5°	366.7	365.2	363.8	362.3	360.9	358.9	356.2	353.5	350.8	348.1	346.1
70°	327.0	325.8	324.6	323.4	322.2	320.2	317.6	314.9	312.3	309.5	307.5
72.5°	286.2	285.1	283.9	282.7	281.4	280.0	278.3	276.6	274.8	273.1	271.0
75°	225.1	224.5	223.9	223.4	222.8	221.7	220.3	218.7	217.2	215.7	214.0
77.5°	170.5	169.5	168.4	167.4	166.4	165.6	165.0	164.4	163.8	163.2	162.3
80°	134.0	133.7	133.4	133.1	132.8	132.4	131.8	131.2	130.6	130.0	129.1
82.5°	99.7	99.7	99.6	99.5	99.5	99.3	98.9	98.6	98.2	97.9	96.6
85°	54.9	54.6	54.3	54.0	53.7	53.4	53.1	52.8	52.5	52.3	51.4
87.5°	19.5	19.4	19.4	19.3	19.2	19.4	19.7	19.9	20.2	20.5	19.8
90°	0.8	2.9	5.0	7.1	9.2	12.2	16.1	19.9	23.7	27.7	27.3
92.5°	14.0	15.6	17.2	18.7	20.2	21.4	22.3	23.2	24.2	25.1	25.1
95°	41.0	42.8	44.5	46.4	48.1	49.1	49.5	49.8	50.2	50.5	50.5
97.5°	75.0	76.5	78.1	79.6	81.2	82.3	82.9	83.6	84.2	84.9	84.9
100°	100.3	101.7	103.0	104.4	105.8	106.8	107.3	107.9	108.4	109.0	109.0
102.5°	126.7	127.8	129.1	130.2	131.3	132.2	132.8	133.5	134.1	134.8	134.9
105°	169.8	170.3	170.8	171.3	171.8	172.3	172.6	173.0	173.3	173.7	174.0
107.5°	213.0	213.8	214.5	215.3	216.0	216.4	216.4	216.4	216.4	216.4	216.6
110°	240.8	241.8	242.9	243.9	245.0	245.5	245.5	245.5	245.5	245.5	245.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	271.0	272.2	273.2	274.2	275.3	275.7	275.6	275.5	275.3	275.2	274.8
115°	315.8	316.8	317.8	318.9	319.9	320.3	319.9	319.6	319.2	318.9	318.7
117.5°	360.2	361.6	363.0	364.5	365.9	366.1	365.1	364.2	363.1	362.1	361.7
120°	389.9	391.3	392.7	394.2	395.6	395.6	394.2	392.7	391.3	389.9	389.9
122.5°	417.1	418.8	420.5	422.1	423.8	424.1	423.2	422.2	421.2	420.2	419.8
125°	459.4	461.0	462.5	464.1	465.7	466.3	465.7	465.1	464.6	464.1	463.6
127.5°	500.6	502.6	504.6	506.6	508.6	509.3	508.7	508.1	507.4	506.8	506.1
130°	526.5	528.8	531.1	533.3	535.6	536.5	536.2	535.8	535.5	535.2	534.8
132.5°	555.5	557.4	559.3	561.1	563.0	563.9	564.0	564.1	564.1	564.2	563.5
135°	594.4	596.3	598.2	600.2	602.1	603.2	603.6	603.9	604.3	604.6	604.5
137.5°	635.3	636.8	638.4	640.1	641.6	642.6	643.1	643.5	644.0	644.4	644.3
140°	659.9	661.5	663.1	664.6	666.2	667.4	668.3	669.2	670.0	671.0	671.0
142.5°	685.2	686.7	688.3	689.9	691.5	692.6	693.2	693.8	694.4	695.0	695.1
145°	721.4	722.7	724.0	725.2	726.4	727.5	728.6	729.6	730.6	731.7	732.0
147.5°	753.9	755.3	756.8	758.2	759.7	760.8	761.5	762.2	763.0	763.7	764.0
150°	776.0	777.0	778.0	779.1	780.1	781.0	781.7	782.4	783.2	783.9	784.4
152.5°	795.5	796.6	797.6	798.7	799.7	800.6	801.5	802.3	803.1	804.1	804.7
155°	824.9	825.4	826.0	826.5	827.0	827.5	828.0	828.6	829.1	829.6	830.5
157.5°	850.0	850.3	850.7	851.0	851.4	851.7	852.0	852.3	852.6	852.9	854.1
160°	865.2	865.5	865.9	866.2	866.6	866.8	867.0	867.2	867.4	867.5	868.6
162.5°	879.0	879.1	879.2	879.2	879.3	879.4	879.6	879.8	880.0	880.1	881.3
165°	897.5	897.4	897.2	897.0	896.8	896.7	896.7	896.7	896.7	896.7	898.0
167.5°	912.9	912.4	911.9	911.4	910.9	910.6	910.6	910.5	910.5	910.4	911.7
170°	921.2	920.7	920.1	919.6	919.1	918.7	918.6	918.4	918.2	918.0	919.3
172.5°	926.9	926.3	925.8	925.2	924.7	924.4	924.2	924.0	923.9	923.7	924.9
175°	933.8	933.3	932.7	932.2	931.7	931.3	930.9	930.6	930.2	929.9	931.1
177.5°	936.6	936.2	935.8	935.3	934.9	934.6	934.3	934.0	933.7	933.5	934.3
180°	935.3	935.3	935.3	935.3	935.3	935.3	935.3	935.3	935.3	935.3	935.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6	1393.6
2.5°	1387.7	1390.1	1392.4	1393.4	1392.9	1392.4	1392.0	1391.5
5°	1378.3	1380.7	1383.1	1383.9	1383.4	1382.8	1382.2	1381.6
7.5°	1362.7	1365.1	1367.6	1368.4	1367.8	1367.1	1366.4	1365.7
10°	1348.8	1351.2	1353.6	1354.3	1353.4	1352.5	1351.6	1350.8
12.5°	1332.4	1334.0	1335.7	1336.3	1335.5	1334.9	1334.2	1333.6
15°	1303.5	1304.7	1306.0	1305.8	1304.3	1302.8	1301.3	1299.8
17.5°	1269.3	1270.7	1272.1	1272.0	1270.6	1269.2	1267.8	1266.4
20°	1242.6	1243.5	1244.5	1244.3	1243.1	1241.9	1240.7	1239.5
22.5°	1214.5	1214.6	1214.8	1214.6	1213.8	1213.0	1212.3	1211.6
25°	1168.4	1168.9	1169.5	1169.5	1168.9	1168.4	1167.8	1167.2
27.5°	1123.1	1122.2	1121.3	1120.1	1118.6	1117.2	1115.8	1114.4
30°	1087.6	1086.8	1085.9	1084.8	1083.7	1082.5	1081.3	1080.1
32.5°	1053.0	1051.4	1049.8	1048.3	1047.2	1046.0	1044.8	1043.6
35°	997.4	995.6	993.9	992.2	990.8	989.3	987.7	986.2
37.5°	941.7	939.5	937.3	935.4	934.0	932.6	931.2	929.7
40°	903.2	900.5	897.9	895.9	894.7	893.5	892.3	891.1
42.5°	865.2	862.2	859.4	857.1	855.4	853.7	852.0	850.4
45°	806.9	803.5	800.3	798.1	796.9	795.7	794.5	793.3
47.5°	746.2	742.8	739.3	736.7	735.0	733.3	731.5	729.8
50°	707.2	703.1	698.9	696.1	694.6	693.1	691.7	690.1
52.5°	666.8	663.4	659.9	657.2	655.3	653.3	651.4	649.3
55°	606.6	603.0	599.5	596.9	595.4	593.9	592.5	591.0
57.5°	544.0	540.5	536.9	534.6	533.5	532.4	531.3	530.1
60°	502.7	499.4	496.1	494.0	493.1	492.2	491.3	490.5
62.5°	463.4	460.4	457.4	455.3	454.1	453.0	451.9	450.8
65°	403.3	400.7	398.0	395.9	394.5	392.9	391.4	389.9
67.5°	344.0	341.8	339.8	338.2	337.0	335.8	334.6	333.4
70°	305.4	303.3	301.2	299.5	298.4	297.2	296.0	294.8
72.5°	268.9	266.8	264.8	263.3	262.3	261.4	260.3	259.4
75°	212.2	210.4	208.6	208.0	208.6	209.2	209.7	210.4
77.5°	161.5	160.6	159.7	158.8	157.9	157.1	156.3	155.4
80°	128.2	127.3	126.4	125.6	125.0	124.5	123.9	123.3
82.5°	95.5	94.4	93.3	92.7	92.5	92.4	92.3	92.2
85°	50.5	49.6	48.7	48.1	47.8	47.5	47.2	46.9
87.5°	19.0	18.2	17.4	16.9	16.7	16.5	16.3	16.1
90°	27.0	26.6	26.3	26.2	26.4	26.5	26.7	26.9
92.5°	25.2	25.3	25.3	25.4	25.4	25.5	25.5	25.5
95°	50.5	50.5	50.5	50.4	50.0	49.7	49.3	49.0
97.5°	84.9	84.9	84.9	84.9	84.9	84.8	84.8	84.7
100°	109.0	109.0	109.0	108.9	108.7	108.5	108.4	108.2
102.5°	135.1	135.2	135.4	135.3	135.2	135.0	134.8	134.6
105°	174.4	174.7	175.1	175.2	175.2	175.2	175.2	175.2
107.5°	216.7	216.8	217.0	216.7	215.9	215.1	214.3	213.5
110°	245.5	245.5	245.5	245.2	244.7	244.2	243.7	243.1





TEST NUMBER: P331400-840

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	274.3	273.9	273.5	273.1	272.7	272.3	272.0	271.6
115°	318.5	318.4	318.2	317.8	317.3	316.8	316.3	315.8
117.5°	361.3	360.9	360.4	360.0	359.5	358.9	358.4	357.9
120°	389.9	389.9	389.9	389.7	389.1	388.6	388.1	387.6
122.5°	419.4	419.0	418.6	418.2	417.8	417.4	417.0	416.7
125°	463.1	462.5	462.0	461.7	461.5	461.3	461.2	461.0
127.5°	505.5	504.8	504.2	503.6	503.1	502.5	502.0	501.4
130°	534.5	534.1	533.8	533.2	532.5	531.9	531.2	530.5
132.5°	562.7	561.9	561.2	560.5	559.9	559.4	558.8	558.3
135°	604.3	604.1	603.9	603.6	603.1	602.6	602.0	601.5
137.5°	644.2	644.0	643.9	643.5	642.8	642.1	641.4	640.7
140°	671.0	671.0	671.0	670.6	669.9	669.2	668.5	667.8
142.5°	695.2	695.4	695.5	695.2	694.5	693.8	693.2	692.5
145°	732.1	732.3	732.5	732.2	731.4	730.7	730.0	729.3
147.5°	764.4	764.8	765.2	765.1	764.4	763.7	763.1	762.3
150°	784.9	785.4	786.0	786.0	785.4	784.9	784.4	783.9
152.5°	805.4	806.1	806.7	806.7	806.1	805.4	804.7	804.1
155°	831.3	832.2	833.1	833.3	832.7	832.2	831.7	831.2
157.5°	855.4	856.6	857.8	857.9	857.1	856.3	855.4	854.5
160°	869.6	870.7	871.7	871.9	871.2	870.5	869.8	869.1
162.5°	882.5	883.7	884.9	885.0	884.2	883.4	882.5	881.7
165°	899.2	900.4	901.6	901.8	900.9	900.0	899.2	898.3
167.5°	912.9	914.1	915.3	915.5	914.6	913.7	912.8	911.9
170°	920.5	921.7	922.9	923.0	922.0	920.9	919.9	918.8
172.5°	926.1	927.4	928.6	928.7	927.7	926.6	925.5	924.5
175°	932.3	933.5	934.7	934.8	933.8	932.7	931.7	930.7
177.5°	935.1	936.0	936.9	936.9	936.0	935.1	934.3	933.5
180°	935.3	935.3	935.3	935.3	935.3	935.3	935.3	935.3

(END OF REPORT)