

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: P331733-840

Luminaire Tested: **SA2XXRDIP-C865D1080U840-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331733-840  
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: SA2XXRDIP-C865D1080U840-4F0-1E-UDD-F1  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1080 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6937.9 lumens  
Efficiency: N/A  
Efficacy: 106.1 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

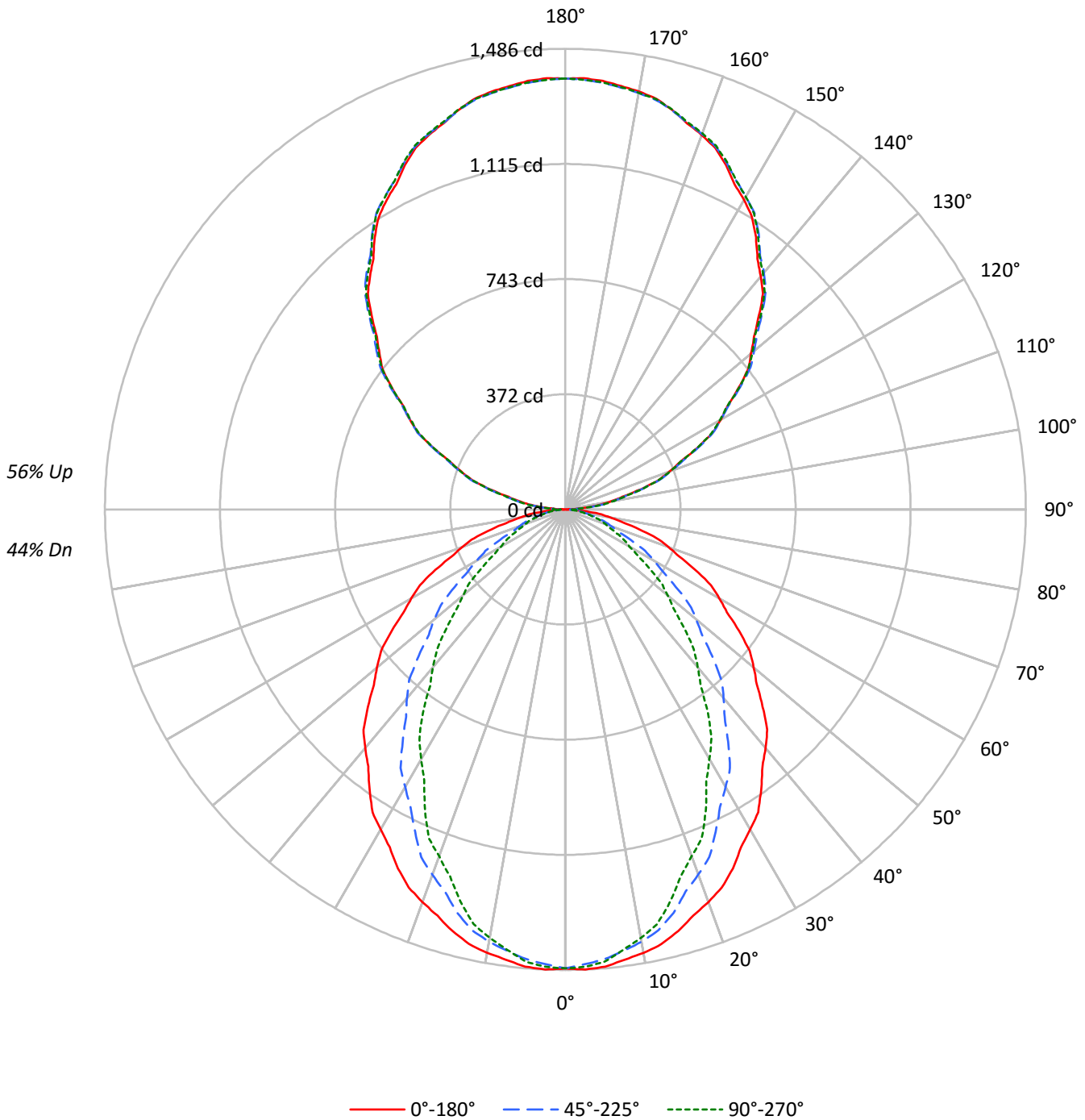
Input Watts (W): 65.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44
1	97	93	89	86	89	85	82	79	71	68	66	57	56	55	45	44	43	38
2	88	81	76	71	81	75	70	66	62	59	56	51	48	46	40	39	37	32
3	81	72	65	59	74	66	60	55	55	51	47	45	42	40	36	34	32	28
4	74	64	56	50	68	59	52	47	49	45	41	41	37	34	33	30	28	24
5	68	57	49	43	62	53	46	41	44	39	35	37	33	30	30	27	25	21
6	63	51	44	38	58	47	41	36	40	35	31	33	29	26	27	24	22	19
7	58	46	39	33	53	43	36	31	37	31	27	30	26	24	25	22	20	17
8	54	42	35	30	50	39	33	28	33	28	24	28	24	21	23	20	18	15
9	50	39	31	26	46	36	29	25	31	26	22	26	22	19	21	18	16	14
10	47	35	28	24	43	33	27	22	28	23	20	24	20	17	20	17	15	13

**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	2.0
10°-20°	380.6	5.5
20°-30°	534.4	7.7
30°-40°	582.7	8.4
40°-50°	535.8	7.7
50°-60°	420.8	6.1
60°-70°	274.4	4.0
70°-80°	141.5	2.0
80°-90°	42.2	0.6
90°-100°	88.1	1.3
100°-110°	273.6	3.9
110°-120°	467.6	6.7
120°-130°	614.9	8.9
130°-140°	690.2	9.9
140°-150°	676.7	9.8
150°-160°	567.6	8.2
160°-170°	376.5	5.4
170°-180°	131.6	1.9
0°-30°	1053.6	15.2
0°-40°	1636.3	23.6
0°-60°	2593.0	37.4
0°-90°	3051.0	44.0
90°-120°	829.3	12.0
90°-150°	2811.1	40.5
90°-180°	3887.0	56.0
0°-180°	6937.9	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	16	41	39	40	6
95°	61	72	75	75	73	70
105°	252	256	258	260	260	266
115°	469	476	474	473	469	464
125°	683	692	690	686	685	610
135°	883	896	899	897	894	682
145°	1072	1080	1087	1088	1084	670
155°	1226	1229	1233	1238	1235	564
165°	1334	1333	1333	1340	1335	376
175°	1388	1384	1382	1389	1383	132
180°	1390	1390	1390	1390	1390	



TEST NUMBER: P331733-840

CATALOG NUMBER: SA2XXRDIP-C865D1080U840-4F0-1E-UDD-F1

**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°	17.4	16.1	14.8	13.5	12.2	12.2	13.3	14.5	15.7	16.8	16.5
90°	1.2	4.3	7.5	10.6	13.7	18.1	23.8	29.6	35.3	41.1	40.5
92.5°	20.9	23.1	25.4	27.8	30.1	31.9	33.2	34.6	36.0	37.3	37.4
95°	61.0	63.6	66.2	68.8	71.4	73.0	73.5	74.0	74.5	75.0	75.0
97.5°	111.5	113.7	116.0	118.4	120.6	122.3	123.2	124.2	125.2	126.2	126.2
100°	149.0	151.1	153.2	155.2	157.3	158.8	159.6	160.3	161.1	161.9	161.9
102.5°	188.4	190.1	191.8	193.4	195.1	196.4	197.4	198.3	199.3	200.4	200.6
105°	252.2	253.0	253.8	254.6	255.3	256.0	256.5	257.0	257.5	258.0	258.6
107.5°	316.5	317.6	318.8	319.9	321.0	321.6	321.6	321.6	321.6	321.6	321.8
110°	357.8	359.3	360.9	362.4	364.1	364.9	364.9	364.9	364.9	364.9	364.9



TEST NUMBER: P331733-840

CATALOG NUMBER: SA2XXRDIP-C865D1080U840-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	402.8	404.3	406.0	407.5	409.1	409.8	409.5	409.3	409.1	408.9	408.3
115°	469.2	470.8	472.3	473.9	475.4	475.9	475.4	474.9	474.4	473.9	473.6
117.5°	535.3	537.5	539.6	541.6	543.7	544.0	542.6	541.1	539.7	538.2	537.6
120°	579.5	581.6	583.7	585.7	587.8	587.8	585.7	583.7	581.6	579.5	579.5
122.5°	619.9	622.4	624.8	627.3	629.9	630.4	628.9	627.4	626.0	624.5	623.9
125°	682.7	685.1	687.4	689.7	692.1	692.9	692.1	691.4	690.5	689.7	688.9
127.5°	744.0	746.9	749.9	752.9	755.8	756.9	755.9	755.0	754.1	753.1	752.1
130°	782.4	785.8	789.2	792.5	796.0	797.4	796.9	796.4	795.9	795.4	794.8
132.5°	825.6	828.4	831.1	833.8	836.7	838.1	838.2	838.3	838.4	838.5	837.4
135°	883.3	886.2	889.1	891.9	894.7	896.5	897.0	897.5	898.1	898.6	898.3
137.5°	944.0	946.4	948.8	951.1	953.4	954.9	955.6	956.3	956.9	957.7	957.5
140°	980.7	983.0	985.3	987.7	990.1	991.9	993.2	994.5	995.8	997.0	997.0
142.5°	1018.2	1020.6	1022.9	1025.2	1027.5	1029.2	1030.1	1031.0	1031.9	1032.8	1033.0
145°	1072.2	1074.0	1075.8	1077.6	1079.4	1081.2	1082.7	1084.3	1085.8	1087.4	1087.6
147.5°	1120.2	1122.5	1124.6	1126.8	1129.0	1130.6	1131.7	1132.8	1133.8	1134.8	1135.4
150°	1153.1	1154.7	1156.2	1157.8	1159.3	1160.6	1161.7	1162.8	1163.8	1164.9	1165.6
152.5°	1182.1	1183.8	1185.3	1186.9	1188.4	1189.8	1191.1	1192.3	1193.7	1194.9	1195.9
155°	1225.9	1226.6	1227.4	1228.2	1229.0	1229.7	1230.5	1231.3	1232.1	1232.8	1234.2
157.5°	1263.1	1263.6	1264.1	1264.7	1265.3	1265.7	1266.2	1266.7	1267.1	1267.6	1269.4
160°	1285.7	1286.2	1286.7	1287.2	1287.8	1288.1	1288.4	1288.7	1288.9	1289.2	1290.7
162.5°	1306.3	1306.4	1306.5	1306.6	1306.8	1306.9	1307.2	1307.4	1307.7	1308.0	1309.7
165°	1333.7	1333.5	1333.2	1332.9	1332.7	1332.6	1332.6	1332.6	1332.6	1332.6	1334.4
167.5°	1356.8	1355.9	1355.1	1354.4	1353.6	1353.2	1353.1	1353.1	1353.0	1353.0	1354.8
170°	1369.0	1368.2	1367.4	1366.5	1365.8	1365.3	1365.0	1364.7	1364.5	1364.2	1366.0
172.5°	1377.4	1376.6	1375.8	1375.0	1374.2	1373.7	1373.5	1373.2	1372.9	1372.7	1374.5
175°	1387.8	1386.9	1386.1	1385.3	1384.6	1383.9	1383.4	1382.9	1382.4	1381.8	1383.7
177.5°	1391.9	1391.3	1390.7	1390.1	1389.5	1388.9	1388.5	1388.1	1387.7	1387.3	1388.5
180°	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1



TEST NUMBER: P331733-840

CATALOG NUMBER: SA2XXRDIP-C865D1080U840-4F0-1E-UDD-F1

**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°	16.1	15.8	15.5	15.2	15.3	15.3	15.5	15.5
90°	40.0	39.5	39.0	38.9	39.1	39.4	39.6	39.9
92.5°	37.5	37.6	37.8	37.8	37.9	37.9	38.0	38.0
95°	75.0	75.0	75.0	74.8	74.3	73.8	73.2	72.7
97.5°	126.2	126.2	126.2	126.2	126.1	126.1	126.0	126.0
100°	161.9	161.9	161.9	161.8	161.5	161.3	161.0	160.7
102.5°	200.8	201.0	201.2	201.2	200.9	200.7	200.4	200.2
105°	259.1	259.6	260.1	260.4	260.4	260.4	260.4	260.4
107.5°	322.0	322.2	322.4	321.9	320.8	319.6	318.4	317.2
110°	364.9	364.9	364.9	364.5	363.7	362.8	362.0	361.3





TEST NUMBER: P331733-840

CATALOG NUMBER: SA2XXRDIP-C865D1080U840-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	407.7	407.1	406.5	405.9	405.3	404.7	404.1	403.5
115°	473.4	473.1	472.8	472.3	471.6	470.8	470.0	469.2
117.5°	536.9	536.3	535.7	535.0	534.2	533.4	532.6	531.9
120°	579.5	579.5	579.5	579.1	578.3	577.5	576.7	575.9
122.5°	623.3	622.7	622.0	621.5	620.9	620.3	619.8	619.1
125°	688.2	687.4	686.6	686.1	685.8	685.6	685.3	685.1
127.5°	751.2	750.2	749.3	748.4	747.6	746.8	746.0	745.1
130°	794.3	793.8	793.2	792.4	791.4	790.3	789.3	788.3
132.5°	836.2	835.1	833.9	832.9	832.1	831.2	830.4	829.6
135°	898.1	897.8	897.5	897.0	896.2	895.4	894.6	893.8
137.5°	957.3	957.0	956.8	956.2	955.1	954.1	953.1	952.0
140°	997.0	997.0	997.0	996.5	995.5	994.5	993.4	992.4
142.5°	1033.2	1033.4	1033.6	1033.2	1032.1	1031.1	1030.1	1029.0
145°	1087.9	1088.2	1088.4	1088.0	1087.0	1086.0	1084.9	1083.9
147.5°	1136.0	1136.5	1137.1	1136.9	1135.9	1134.9	1133.9	1133.0
150°	1166.4	1167.2	1168.0	1168.0	1167.2	1166.4	1165.6	1164.9
152.5°	1196.9	1197.8	1198.8	1198.8	1197.8	1196.9	1195.9	1194.9
155°	1235.5	1236.8	1238.1	1238.3	1237.6	1236.8	1236.0	1235.2
157.5°	1271.1	1272.9	1274.7	1275.0	1273.6	1272.4	1271.2	1269.9
160°	1292.3	1293.8	1295.5	1295.7	1294.6	1293.6	1292.5	1291.5
162.5°	1311.5	1313.2	1315.0	1315.2	1314.0	1312.8	1311.5	1310.3
165°	1336.3	1338.1	1339.9	1340.1	1338.9	1337.6	1336.3	1334.9
167.5°	1356.7	1358.5	1360.3	1360.5	1359.2	1357.8	1356.5	1355.1
170°	1367.9	1369.7	1371.5	1371.7	1370.1	1368.6	1367.0	1365.4
172.5°	1376.3	1378.2	1380.0	1380.1	1378.6	1377.0	1375.4	1373.8
175°	1385.5	1387.4	1389.2	1389.3	1387.8	1386.1	1384.6	1383.0
177.5°	1389.8	1391.0	1392.2	1392.2	1391.0	1389.8	1388.5	1387.3
180°	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1	1390.1

(END OF REPORT)