

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: P331417-935

Luminaire Tested: **SA2XXDIP-C865D1080U935-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331417-935
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: SA2XXDIP-C865D1080U935-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1080 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

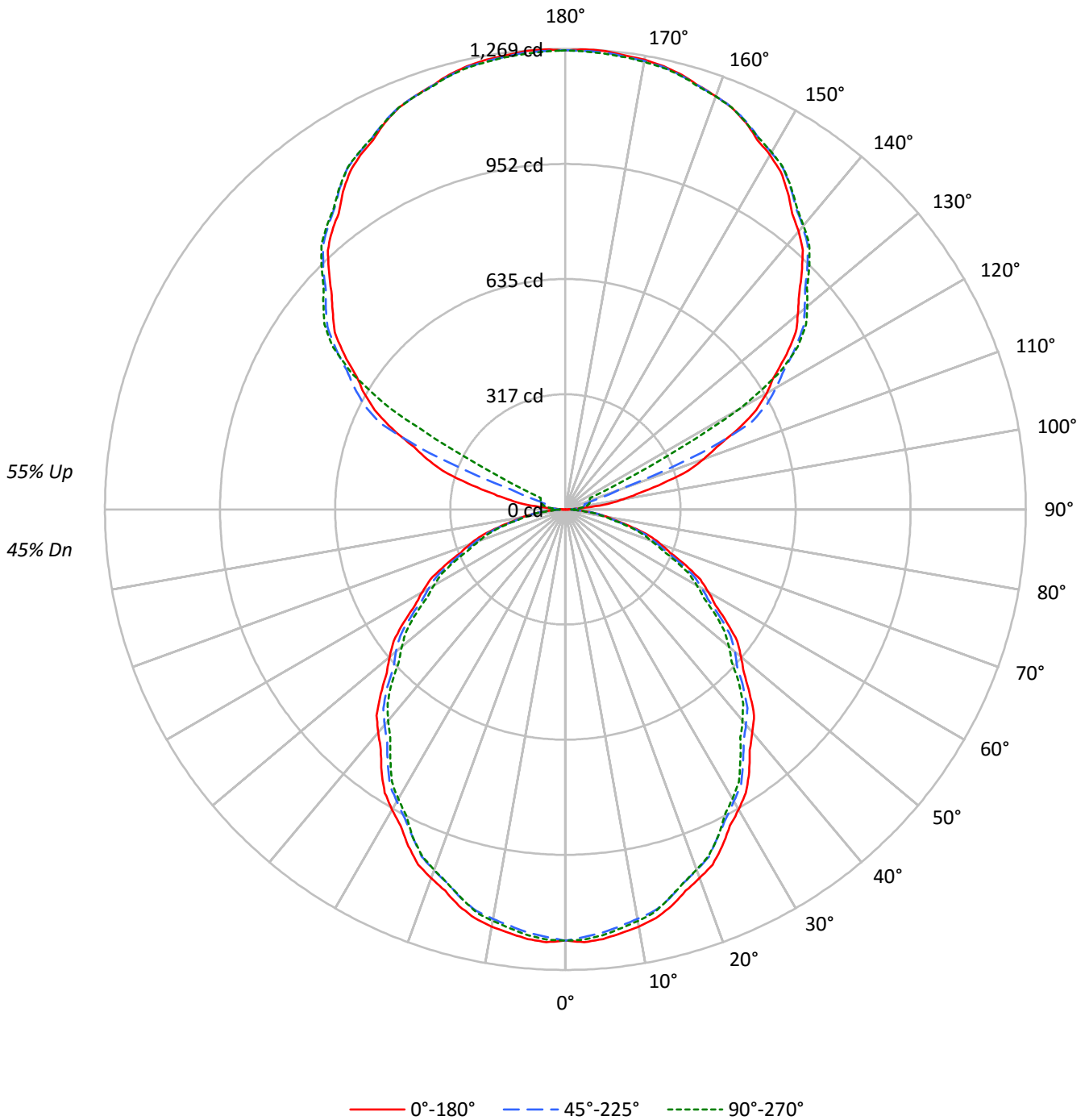
Lumens per Lamp: N/A
Luminaire Lumens: 6732.9 lumens
Efficiency: N/A
Efficacy: 103.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 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



TEST NUMBER: P331417-935
CATALOG NUMBER: SA2XXDIP-C865D1080U935-4F0-1E-UDD-F

Luminous Intensity Polar Plot





TEST NUMBER: P331417-935

CATALOG NUMBER: SA2XXDIP-C865D1080U935-4F0-1E-UDD-F

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	81	81	81	65	65	65	51	51	51	45
1	97	92	88	85	88	85	81	78	71	68	66	57	56	54	45	44	43	38
2	88	81	75	69	80	74	69	64	62	58	55	50	48	45	40	38	37	32
3	80	71	64	58	73	65	59	54	55	50	46	45	41	38	35	33	31	27
4	73	63	55	49	67	58	51	46	48	43	39	40	36	33	32	29	27	23
5	67	56	48	42	61	51	44	39	43	38	34	36	32	28	29	26	23	20
6	62	50	42	36	57	46	39	34	39	33	29	32	28	25	26	23	21	18
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	24	21	18	16
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	16	14
9	49	37	30	25	45	35	28	23	29	24	21	25	21	18	20	17	15	13
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	19	16	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	19184	19184	19184
5°	19258	18979	19091
10°	19143	18787	18882
15°	18907	18544	18524
20°	18570	18179	18158
25°	18235	17728	17728
30°	17807	17316	17167
35°	17406	16821	16575
40°	16904	16326	16012
45°	16408	15835	15445
50°	15870	15325	14780
55°	15308	14728	14184
60°	14683	14018	13504
65°	14013	13310	12699
70°	13161	12458	11863
75°	11971	11472	11185
80°	10628	10302	9772
85°	8670	8262	7410



TEST NUMBER: P331417-935

CATALOG NUMBER: SA2XXDIP-C865D1080U935-4F0-1E-UDD-F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.7	1.7
10°-20°	314.4	4.7
20°-30°	462.1	6.9
30°-40°	536.8	8.0
40°-50°	536.2	8.0
50°-60°	467.6	6.9
60°-70°	345.7	5.1
70°-80°	195.8	2.9
80°-90°	55.8	0.8
90°-100°	42.2	0.6
100°-110°	154.7	2.3
110°-120°	413.6	6.1
120°-130°	682.8	10.1
130°-140°	726.1	10.8
140°-150°	674.9	10.0
150°-160°	542.6	8.1
160°-170°	349.7	5.2
170°-180°	120.4	1.8
0°-30°	888.2	13.2
0°-40°	1425.0	21.2
0°-60°	2428.7	36.1
0°-90°	3026.0	44.9
90°-120°	610.5	9.1
90°-150°	2694.3	40.0
90°-180°	3707.0	55.1
0°-180°	6732.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1188	1188	1188	1188	1188	
5°	1188	1183	1171	1180	1178	113
15°	1131	1124	1109	1113	1108	318
25°	1024	1014	995	997	995	471
35°	883	871	853	847	841	551
45°	719	710	694	681	676	554
55°	544	537	523	510	504	486
65°	367	360	348	338	332	363
75°	192	189	184	178	179	205
85°	47	46	45	41	40	54
90°	1	11	18	23	25	5
95°	60	31	36	40	39	73
105°	278	290	56	66	70	297
115°	526	542	565	161	75	518
125°	744	756	773	780	783	663
135°	921	935	944	952	951	711
145°	1068	1068	1083	1089	1085	668
155°	1176	1169	1179	1184	1177	542
165°	1239	1234	1237	1242	1237	350
175°	1268	1262	1263	1269	1260	121
180°	1265	1265	1265	1265	1265	



TEST NUMBER: P331417-935

CATALOG NUMBER: SA2XXDIP-C865D1080U935-4F0-1E-UDD-F

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1188.2	1188.2	1188.2	1188.2	1188.2	1188.2	1188.2	1188.2	1188.2	1188.2	1188.2
2.5°	1193.7	1192.7	1191.6	1190.7	1189.6	1188.0	1185.8	1183.5	1181.3	1179.1	1181.1
5°	1188.2	1187.1	1186.2	1185.2	1184.1	1182.2	1179.5	1176.6	1173.9	1171.0	1173.1
7.5°	1177.7	1176.1	1174.6	1172.9	1171.4	1169.2	1166.3	1163.5	1160.6	1157.8	1159.9
10°	1167.6	1165.9	1164.1	1162.3	1160.5	1158.1	1155.0	1152.0	1149.0	1145.9	1148.0
12.5°	1153.9	1152.4	1150.8	1149.2	1147.6	1145.3	1142.3	1139.2	1136.2	1133.2	1134.5
15°	1131.1	1129.5	1128.0	1126.5	1125.0	1122.6	1119.3	1115.9	1112.7	1109.4	1110.3
17.5°	1101.8	1100.3	1098.8	1097.3	1095.7	1093.3	1089.9	1086.6	1083.2	1079.9	1081.1
20°	1080.8	1079.3	1077.8	1076.2	1074.7	1072.2	1068.6	1065.1	1061.5	1058.0	1058.7
22.5°	1059.8	1057.7	1055.5	1053.3	1051.3	1048.5	1045.2	1041.8	1038.5	1035.1	1035.3
25°	1023.6	1021.7	1019.6	1017.6	1015.5	1012.4	1008.1	1003.8	999.4	995.1	995.7
27.5°	982.6	980.8	978.9	977.1	975.3	972.6	969.2	965.8	962.4	959.0	958.3
30°	955.1	953.1	951.1	949.1	947.0	944.1	940.3	936.5	932.6	928.8	928.1
32.5°	925.9	924.3	922.6	921.0	919.4	916.5	912.6	908.5	904.6	900.5	899.1
35°	883.1	880.6	878.0	875.6	873.0	869.7	865.6	861.6	857.5	853.4	852.0
37.5°	834.9	832.7	830.4	828.2	826.0	822.9	818.8	814.8	810.6	806.6	804.7
40°	802.0	800.0	798.0	795.9	793.9	790.8	786.8	782.7	778.7	774.6	772.3
42.5°	770.1	768.0	765.9	764.0	761.9	758.9	754.8	750.8	746.7	742.6	740.1
45°	718.6	716.9	715.1	713.3	711.5	708.7	704.9	701.1	697.3	693.5	690.7
47.5°	667.4	665.8	664.1	662.5	660.7	657.9	653.9	650.0	646.0	642.0	639.1
50°	631.8	630.5	629.3	628.0	626.7	624.3	620.8	617.2	613.6	610.1	606.6
52.5°	597.1	595.4	593.7	592.0	590.4	587.9	584.5	581.2	577.8	574.5	571.5
55°	543.8	542.3	540.8	539.2	537.7	535.5	532.4	529.3	526.3	523.2	520.2
57.5°	490.3	489.1	487.9	486.7	485.5	483.2	479.8	476.5	473.1	469.8	466.8
60°	454.7	453.7	452.7	451.7	450.6	448.4	444.8	441.3	437.7	434.1	431.4
62.5°	420.0	418.4	416.7	415.1	413.5	411.3	408.5	405.8	403.0	400.4	397.8
65°	366.8	365.2	363.7	362.1	360.7	358.6	356.1	353.5	351.0	348.4	346.2
67.5°	312.6	311.3	310.1	308.9	307.7	306.0	303.7	301.4	299.1	296.8	295.1
70°	278.8	277.8	276.7	275.7	274.7	273.0	270.8	268.5	266.2	263.9	262.2
72.5°	244.0	243.1	242.0	241.0	240.0	238.8	237.3	235.8	234.3	232.8	231.1
75°	191.9	191.4	190.9	190.5	189.9	189.0	187.8	186.5	185.2	183.9	182.4
77.5°	145.3	144.5	143.6	142.8	141.9	141.2	140.7	140.2	139.7	139.1	138.4
80°	114.3	114.0	113.7	113.5	113.2	112.9	112.4	111.8	111.3	110.8	110.0
82.5°	85.0	85.0	84.9	84.8	84.8	84.6	84.3	84.0	83.7	83.4	82.4
85°	46.8	46.6	46.3	46.1	45.8	45.5	45.3	45.0	44.8	44.6	43.8
87.5°	16.6	16.7	16.7	16.8	16.8	16.8	16.7	16.6	16.5	16.4	16.0
90°	0.9	3.2	5.4	7.7	9.9	11.8	13.4	15.1	16.7	18.3	19.3
92.5°	18.5	18.3	18.1	17.9	17.7	18.0	18.8	19.6	20.4	21.3	21.8
95°	59.5	52.8	46.1	39.3	32.6	30.0	31.4	32.9	34.3	35.7	36.7
97.5°	118.0	99.2	80.2	61.3	42.4	34.6	37.9	41.2	44.5	47.8	48.6
100°	162.0	134.1	106.2	78.4	50.5	38.3	41.8	45.3	48.7	52.2	53.8
102.5°	210.3	204.4	198.5	192.6	186.8	169.4	140.4	111.5	82.6	53.6	55.8
105°	278.3	284.4	290.4	296.5	302.6	277.9	222.4	166.9	111.3	55.8	58.0
107.5°	355.7	360.6	365.5	370.4	375.4	344.6	277.9	211.4	144.7	78.2	75.9
110°	405.4	409.7	414.1	418.3	422.6	395.3	336.5	277.8	219.0	160.1	139.8



TEST NUMBER: P331417-935

CATALOG NUMBER: SA2XXDIP-C865D1080U935-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	452.4	456.2	459.9	463.6	467.4	462.1	447.5	433.1	418.5	404.0	329.8
115°	526.3	529.8	533.2	536.7	540.1	544.4	549.5	554.6	559.6	564.7	470.5
117.5°	592.4	596.2	600.1	604.0	607.9	611.5	615.0	618.5	622.0	625.5	602.7
120°	640.7	643.8	646.8	649.9	652.9	656.3	660.0	663.6	667.3	670.9	673.3
122.5°	681.7	684.9	688.1	691.4	694.6	698.2	702.1	706.1	710.2	714.1	715.6
125°	744.2	746.7	749.4	752.1	754.7	757.9	761.8	765.7	769.6	773.4	774.8
127.5°	800.7	803.7	806.6	809.5	812.4	815.3	818.2	821.0	824.0	826.9	829.0
130°	836.5	839.8	843.1	846.4	849.5	852.3	854.5	856.8	859.0	861.3	863.5
132.5°	873.1	876.0	878.7	881.5	884.2	886.7	889.0	891.2	893.5	895.7	897.6
135°	920.8	924.0	927.3	930.6	933.8	936.3	938.1	940.0	941.8	943.7	945.7
137.5°	968.9	971.2	973.4	975.8	978.0	980.2	982.3	984.4	986.4	988.5	990.5
140°	1000.4	1002.0	1003.7	1005.3	1006.9	1008.8	1011.1	1013.3	1015.5	1017.8	1019.6
142.5°	1026.7	1028.2	1029.7	1031.1	1032.6	1034.7	1037.2	1039.7	1042.3	1044.9	1046.5
145°	1068.2	1067.9	1067.7	1067.6	1067.3	1068.9	1072.4	1075.8	1079.3	1082.8	1084.2
147.5°	1104.2	1103.5	1102.7	1101.9	1101.1	1102.4	1105.9	1109.2	1112.7	1116.1	1117.1
150°	1127.7	1126.2	1124.8	1123.3	1122.0	1122.8	1126.1	1129.4	1132.6	1135.8	1137.1
152.5°	1147.4	1145.8	1144.2	1142.6	1141.1	1141.8	1144.9	1148.0	1151.1	1154.2	1155.4
155°	1176.1	1174.3	1172.5	1170.6	1168.8	1169.2	1171.6	1174.0	1176.5	1178.9	1180.1
157.5°	1198.7	1197.1	1195.6	1194.0	1192.5	1192.6	1194.3	1195.9	1197.7	1199.4	1200.8
160°	1211.9	1210.7	1209.4	1208.2	1206.9	1206.9	1208.2	1209.4	1210.7	1211.9	1213.1
162.5°	1223.6	1222.4	1221.1	1219.9	1218.7	1218.6	1219.6	1220.7	1221.8	1222.8	1224.2
165°	1239.3	1238.0	1236.8	1235.6	1234.4	1234.1	1234.7	1235.4	1236.0	1236.6	1237.9
167.5°	1251.0	1249.8	1248.5	1247.3	1246.1	1245.8	1246.4	1246.9	1247.5	1248.1	1249.5
170°	1257.6	1256.4	1255.2	1254.0	1252.8	1252.3	1252.8	1253.1	1253.5	1254.0	1255.3
172.5°	1262.0	1260.8	1259.6	1258.4	1257.1	1256.7	1257.1	1257.5	1257.9	1258.4	1259.7
175°	1267.7	1266.3	1264.8	1263.4	1262.0	1261.5	1261.9	1262.3	1262.7	1263.1	1264.6
177.5°	1268.6	1267.5	1266.3	1265.2	1264.0	1263.5	1263.7	1263.9	1264.0	1264.2	1265.3
180°	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9



TEST NUMBER: P331417-935

CATALOG NUMBER: SA2XXDIP-C865D1080U935-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1188.2	1188.2	1188.2	1188.2	1188.2	1188.2	1188.2	1188.2
2.5°	1183.1	1185.2	1187.1	1188.0	1187.6	1187.1	1186.8	1186.4
5°	1175.1	1177.2	1179.2	1179.9	1179.5	1179.0	1178.5	1177.9
7.5°	1161.8	1163.9	1166.0	1166.7	1166.1	1165.5	1165.0	1164.4
10°	1150.0	1152.0	1154.1	1154.7	1153.9	1153.1	1152.4	1151.7
12.5°	1136.0	1137.4	1138.8	1139.3	1138.7	1138.2	1137.6	1137.0
15°	1111.4	1112.4	1113.4	1113.3	1112.1	1110.8	1109.5	1108.2
17.5°	1082.2	1083.4	1084.6	1084.5	1083.3	1082.1	1080.9	1079.7
20°	1059.5	1060.2	1061.0	1060.8	1059.9	1058.9	1057.8	1056.8
22.5°	1035.4	1035.5	1035.7	1035.5	1034.8	1034.2	1033.6	1033.0
25°	996.2	996.6	997.1	997.1	996.6	996.2	995.7	995.1
27.5°	957.5	956.7	956.0	955.0	953.7	952.5	951.3	950.1
30°	927.3	926.6	925.8	924.9	923.9	922.9	921.9	920.8
32.5°	897.8	896.4	895.0	893.8	892.9	891.8	890.8	889.8
35°	850.4	848.9	847.4	845.9	844.7	843.4	842.1	840.9
37.5°	802.9	801.0	799.1	797.5	796.3	795.1	793.9	792.6
40°	770.1	767.8	765.5	763.8	762.8	761.8	760.8	759.7
42.5°	737.6	735.1	732.7	730.7	729.3	727.9	726.4	725.0
45°	687.9	685.1	682.3	680.4	679.4	678.4	677.3	676.4
47.5°	636.2	633.3	630.3	628.1	626.6	625.2	623.7	622.2
50°	603.0	599.4	595.9	593.5	592.2	590.9	589.7	588.4
52.5°	568.5	565.6	562.7	560.3	558.7	557.0	555.3	553.6
55°	517.2	514.1	511.1	508.9	507.6	506.4	505.1	503.9
57.5°	463.8	460.8	457.8	455.8	454.9	453.9	453.0	451.9
60°	428.6	425.8	423.0	421.2	420.4	419.7	418.9	418.2
62.5°	395.1	392.5	389.9	388.2	387.2	386.2	385.3	384.4
65°	343.9	341.6	339.3	337.5	336.3	335.0	333.7	332.4
67.5°	293.3	291.4	289.7	288.3	287.3	286.3	285.2	284.2
70°	260.4	258.6	256.8	255.4	254.4	253.4	252.4	251.3
72.5°	229.3	227.5	225.8	224.5	223.6	222.8	222.0	221.2
75°	180.9	179.3	177.9	177.4	177.9	178.4	178.8	179.3
77.5°	137.7	136.9	136.1	135.3	134.7	134.0	133.3	132.5
80°	109.3	108.6	107.8	107.1	106.6	106.2	105.6	105.1
82.5°	81.5	80.5	79.6	79.0	78.9	78.8	78.7	78.6
85°	43.0	42.3	41.5	41.0	40.7	40.5	40.2	40.0
87.5°	15.7	15.2	14.8	14.6	14.5	14.3	14.2	14.1
90°	20.3	21.4	22.4	23.1	23.5	23.9	24.3	24.7
92.5°	22.3	22.8	23.3	23.8	24.0	24.2	24.5	24.7
95°	37.7	38.7	39.8	40.2	40.0	39.8	39.5	39.3
97.5°	49.4	50.2	51.1	51.6	51.8	52.1	52.3	52.5
100°	55.4	57.1	58.7	59.7	60.1	60.5	61.0	61.3
102.5°	57.9	60.0	62.1	63.5	64.0	64.6	65.2	65.7
105°	60.3	62.5	64.7	66.3	67.2	67.9	68.7	69.6
107.5°	73.6	71.3	69.1	68.4	69.1	69.9	70.8	71.5
110°	119.5	99.2	78.8	69.1	69.8	70.7	71.5	72.3



TEST NUMBER: P331417-935

CATALOG NUMBER: SA2XXDIP-C865D1080U935-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	255.6	181.4	107.2	70.4	71.1	71.7	72.4	73.0
115°	376.3	282.2	188.0	133.6	119.0	104.4	89.7	75.1
117.5°	580.0	557.2	534.4	498.9	450.8	402.7	354.6	306.4
120°	675.8	678.2	680.7	668.1	640.7	613.2	585.7	558.4
122.5°	717.0	718.5	720.0	718.0	712.7	707.4	702.1	696.7
125°	776.3	777.7	779.1	780.2	780.8	781.4	782.0	782.6
127.5°	831.0	833.1	835.2	836.3	836.4	836.5	836.6	836.7
130°	865.7	868.0	870.2	871.2	871.1	870.8	870.6	870.5
132.5°	899.5	901.5	903.4	904.2	904.0	903.8	903.6	903.4
135°	947.7	949.8	951.7	952.6	952.2	951.7	951.4	951.0
137.5°	992.5	994.5	996.4	997.1	996.4	995.7	995.1	994.4
140°	1021.5	1023.3	1025.1	1025.5	1024.5	1023.5	1022.4	1021.5
142.5°	1048.2	1049.9	1051.5	1051.9	1050.9	1049.8	1048.9	1047.8
145°	1085.6	1087.0	1088.5	1088.6	1087.7	1086.7	1085.6	1084.6
147.5°	1118.2	1119.3	1120.3	1120.4	1119.6	1118.7	1117.8	1117.0
150°	1138.3	1139.5	1140.7	1140.8	1139.8	1138.8	1137.8	1136.8
152.5°	1156.6	1157.9	1159.1	1159.0	1157.6	1156.3	1154.9	1153.7
155°	1181.3	1182.6	1183.8	1183.5	1181.9	1180.3	1178.7	1177.1
157.5°	1202.1	1203.5	1204.9	1204.8	1203.2	1201.6	1200.1	1198.4
160°	1214.3	1215.5	1216.7	1216.6	1215.2	1213.8	1212.4	1210.9
162.5°	1225.5	1226.9	1228.4	1228.1	1226.4	1224.7	1222.9	1221.2
165°	1239.4	1240.8	1242.3	1242.3	1240.8	1239.4	1237.9	1236.6
167.5°	1250.9	1252.3	1253.8	1253.5	1251.7	1249.9	1248.1	1246.2
170°	1256.8	1258.2	1259.6	1259.4	1257.6	1255.8	1254.0	1252.1
172.5°	1261.2	1262.6	1264.0	1263.9	1262.0	1260.2	1258.4	1256.5
175°	1265.9	1267.4	1268.8	1268.5	1266.4	1264.4	1262.4	1260.3
177.5°	1266.4	1267.6	1268.8	1268.6	1267.1	1265.7	1264.2	1262.7
180°	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9

(END OF REPORT)