

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: P331732-927

Luminaire Tested: **SA2XXRDIP-C865D1080U927-4F0-1E-UDD-F**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331732-927  
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-C865D1080U927-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1080 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5802.5 lumens  
Efficiency: N/A  
Efficacy: 88.7 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

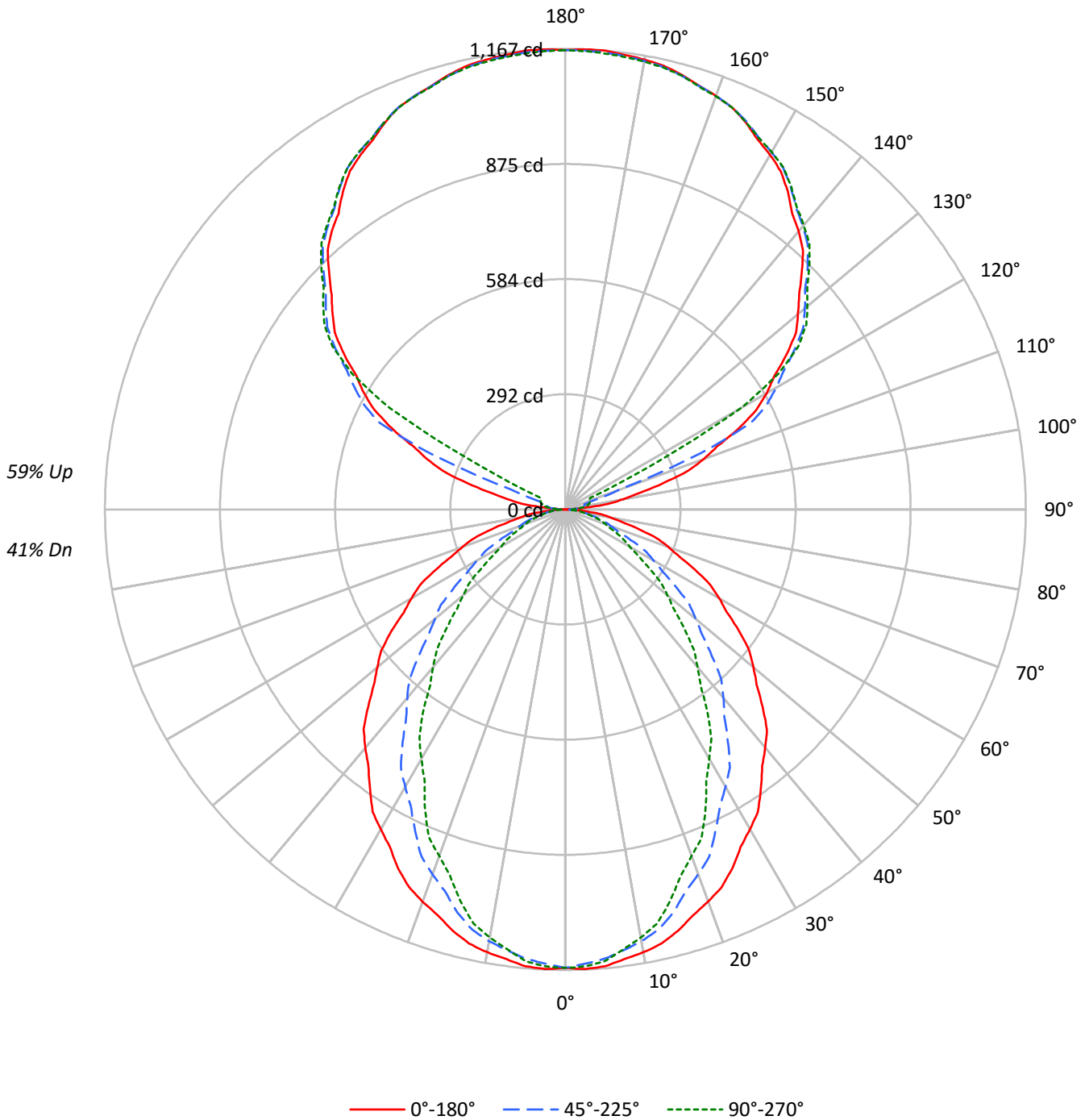
Input Watts (W): 65.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	105	105	105	105	96	96	96	96	78	78	78	63	63	63	48	48	48	41
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	43	42	41	35
2	88	81	75	70	80	74	69	65	61	58	55	49	47	45	38	37	35	30
3	80	71	64	59	73	65	59	55	54	50	46	44	41	38	34	32	31	26
4	74	63	56	50	67	58	52	47	48	44	40	39	36	33	31	29	27	23
5	68	57	49	43	62	52	45	40	44	38	34	36	32	29	28	26	23	20
6	63	51	43	37	57	47	40	35	39	34	30	32	28	25	26	23	21	18
7	58	46	38	33	53	42	36	31	36	31	27	29	26	23	23	21	19	16
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	22	19	17	14
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	17	15	13
10	47	35	28	23	43	32	26	22	28	23	19	23	19	17	19	16	14	12

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

	0°	45°	90°
0°	18755	18755	18755
5°	18827	18519	18621
10°	18682	18216	18061
15°	18467	17677	17167
20°	18170	16905	16057
25°	17865	16030	14982
30°	17443	15129	13601
35°	17030	14152	12390
40°	16617	13139	10989
45°	16130	12001	9720
50°	15631	10854	8475
55°	15122	9619	7279
60°	14528	8315	6042
65°	13857	6988	5501
70°	13053	5755	5061
75°	12071	5246	4722
80°	10646	4695	4305
85°	8373	3705	3705



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	108.7	1.9
10°-20°	298.5	5.1
20°-30°	419.2	7.2
30°-40°	457.1	7.9
40°-50°	420.3	7.2
50°-60°	330.1	5.7
60°-70°	215.2	3.7
70°-80°	111.0	1.9
80°-90°	31.7	0.5
90°-100°	38.8	0.7
100°-110°	142.4	2.5
110°-120°	380.6	6.6
120°-130°	628.2	10.8
130°-140°	668.1	11.5
140°-150°	620.9	10.7
150°-160°	499.2	8.6
160°-170°	321.7	5.5
170°-180°	110.7	1.9
0°-30°	826.5	14.2
0°-40°	1283.6	22.1
0°-60°	2034.0	35.1
0°-90°	2391.9	41.2
90°-120°	561.7	9.7
90°-150°	2478.9	42.7
90°-180°	3411.0	58.8
0°-180°	5802.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1162	1162	1162	1162	1162	
5°	1162	1156	1143	1151	1149	110
15°	1105	1092	1058	1038	1027	311
25°	1003	967	900	858	841	461
35°	864	808	718	654	629	541
45°	706	634	526	454	426	545
55°	537	453	342	281	259	480
65°	363	277	183	149	144	359
75°	194	122	84	77	76	205
85°	45	24	20	20	20	53
90°	1	10	17	21	23	4
95°	55	29	33	37	36	67
105°	256	267	51	60	64	274
115°	484	499	520	148	69	477
125°	685	696	712	717	720	610
135°	847	860	868	876	875	654
145°	983	983	996	1002	998	614
155°	1082	1076	1085	1089	1083	498
165°	1140	1136	1138	1143	1138	322
175°	1166	1161	1162	1167	1160	111
180°	1164	1164	1164	1164	1164	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6
2.5°	1165.8	1164.8	1163.9	1162.9	1162.1	1160.5	1158.5	1156.4	1154.4	1152.3	1154.2
5°	1161.6	1160.4	1159.2	1158.0	1156.9	1154.8	1151.8	1148.7	1145.7	1142.6	1144.7
7.5°	1149.5	1148.1	1146.7	1145.3	1143.8	1141.3	1137.7	1134.2	1130.6	1127.0	1127.7
10°	1139.5	1137.8	1136.2	1134.6	1132.9	1129.8	1125.1	1120.5	1115.8	1111.1	1110.4
12.5°	1126.9	1124.8	1122.8	1120.9	1118.8	1114.8	1108.8	1102.9	1096.9	1090.9	1089.6
15°	1104.8	1102.2	1099.6	1097.1	1094.5	1089.3	1081.3	1073.4	1065.4	1057.5	1053.0
17.5°	1077.7	1073.7	1069.8	1065.9	1062.0	1054.9	1044.7	1034.5	1024.4	1014.2	1008.9
20°	1057.5	1052.8	1048.1	1043.5	1038.8	1030.6	1018.9	1007.3	995.6	983.9	978.0
22.5°	1035.6	1030.4	1025.2	1019.9	1014.7	1005.5	992.3	979.1	966.0	952.8	945.2
25°	1002.8	995.4	987.9	980.4	973.0	961.5	946.0	930.7	915.2	899.8	890.3
27.5°	963.3	955.1	947.1	938.9	930.8	918.1	900.6	883.3	865.9	848.5	837.3
30°	935.6	926.7	917.8	908.9	900.1	886.3	867.6	848.9	830.2	811.5	799.6
32.5°	908.6	898.3	887.9	877.5	867.1	852.5	833.4	814.3	795.3	776.2	762.6
35°	864.0	852.2	840.3	828.3	816.4	800.2	779.6	759.1	738.6	718.0	703.2
37.5°	819.5	806.4	793.4	780.2	767.1	749.6	727.8	705.8	684.0	662.0	645.8
40°	788.4	774.4	760.3	746.3	732.3	714.0	691.3	668.7	646.0	623.4	606.7
42.5°	756.5	741.6	726.9	712.2	697.4	678.3	654.9	631.4	608.1	584.6	567.5
45°	706.4	690.7	675.1	659.4	643.8	623.7	599.2	574.6	550.1	525.6	509.0
47.5°	657.6	641.0	624.5	607.8	591.3	570.3	545.0	519.7	494.3	469.1	452.6
50°	622.3	605.7	589.1	572.5	556.0	534.8	509.1	483.4	457.7	432.1	415.9
52.5°	587.8	570.5	553.2	535.8	518.5	497.3	472.1	446.9	421.8	396.7	381.1
55°	537.2	519.0	500.7	482.5	464.3	442.5	417.3	392.1	366.9	341.7	327.6
57.5°	485.2	466.5	447.8	429.1	410.5	389.0	364.7	340.5	316.2	292.0	279.2
60°	449.9	431.2	412.6	393.9	375.2	353.8	329.7	305.6	281.6	257.5	245.7
62.5°	415.4	396.7	378.0	359.3	340.6	319.9	296.9	274.0	251.0	228.1	216.7
65°	362.7	343.7	324.8	305.9	287.0	267.0	246.0	225.0	203.9	182.9	175.0
67.5°	311.8	293.0	274.3	255.4	236.6	217.8	198.9	180.0	161.1	142.1	138.5
70°	276.5	258.3	240.0	221.8	203.6	186.4	170.3	154.2	138.1	121.9	119.6
72.5°	242.8	225.4	207.9	190.4	172.9	157.7	144.8	131.8	118.9	106.0	104.0
75°	193.5	177.1	160.7	144.3	128.0	115.9	107.9	100.0	92.1	84.1	82.5
77.5°	144.9	130.5	116.1	101.8	87.5	78.4	74.5	70.7	66.9	63.1	62.1
80°	114.5	102.7	90.8	78.8	66.9	59.8	57.4	55.1	52.8	50.5	49.5
82.5°	86.8	77.6	68.2	58.9	49.7	44.2	42.6	41.0	39.5	37.9	37.3
85°	45.2	40.3	35.4	30.5	25.6	22.8	22.1	21.4	20.7	20.0	20.0
87.5°	13.6	12.5	11.5	10.4	9.3	8.9	9.2	9.5	9.8	10.1	10.1
90°	0.9	2.9	5.0	7.1	9.1	10.9	12.4	13.9	15.4	16.9	17.7
92.5°	17.0	16.8	16.6	16.5	16.2	16.6	17.3	18.1	18.8	19.6	20.0
95°	54.7	48.6	42.4	36.2	30.0	27.6	28.9	30.3	31.5	32.9	33.7
97.5°	108.6	91.3	73.8	56.4	39.1	31.8	34.9	37.9	41.0	44.0	44.7
100°	149.1	123.4	97.8	72.2	46.5	35.3	38.4	41.7	44.8	48.0	49.5
102.5°	193.5	188.1	182.7	177.2	171.8	155.8	129.2	102.6	76.0	49.4	51.3
105°	256.0	261.7	267.2	272.8	278.5	255.7	204.6	153.5	102.4	51.3	53.4
107.5°	327.3	331.8	336.3	340.8	345.4	317.0	255.7	194.5	133.2	71.9	69.8
110°	373.0	377.0	381.0	384.8	388.8	363.7	309.6	255.6	201.5	147.3	128.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	416.2	419.7	423.1	426.6	430.1	425.2	411.8	398.5	385.1	371.7	303.5
115°	484.3	487.4	490.6	493.8	496.9	500.9	505.6	510.2	514.9	519.6	432.9
117.5°	545.0	548.6	552.2	555.7	559.3	562.6	565.9	569.1	572.3	575.5	554.5
120°	589.5	592.3	595.1	597.9	600.7	603.8	607.2	610.5	613.9	617.3	619.5
122.5°	627.2	630.2	633.1	636.1	639.1	642.4	646.0	649.7	653.4	657.0	658.4
125°	684.7	687.1	689.5	692.0	694.3	697.4	700.9	704.5	708.1	711.6	712.9
127.5°	736.7	739.4	742.1	744.8	747.5	750.1	752.8	755.4	758.1	760.8	762.7
130°	769.7	772.7	775.7	778.7	781.6	784.2	786.2	788.3	790.4	792.4	794.5
132.5°	803.4	806.0	808.5	811.0	813.6	815.9	817.9	820.0	822.0	824.1	825.9
135°	847.2	850.2	853.2	856.2	859.1	861.5	863.2	864.8	866.6	868.2	870.1
137.5°	891.4	893.6	895.6	897.8	899.8	901.8	903.8	905.7	907.6	909.5	911.3
140°	920.4	921.9	923.4	925.0	926.5	928.2	930.3	932.3	934.4	936.4	938.1
142.5°	944.7	946.0	947.4	948.7	950.1	952.0	954.3	956.6	959.0	961.4	962.9
145°	982.8	982.5	982.4	982.2	982.0	983.5	986.7	989.8	993.1	996.2	997.5
147.5°	1016.0	1015.3	1014.5	1013.8	1013.1	1014.3	1017.5	1020.6	1023.7	1026.9	1027.9
150°	1037.5	1036.2	1034.9	1033.6	1032.3	1033.1	1036.1	1039.1	1042.1	1045.0	1046.2
152.5°	1055.7	1054.2	1052.7	1051.3	1049.9	1050.5	1053.4	1056.2	1059.1	1061.9	1063.0
155°	1082.1	1080.5	1078.8	1077.1	1075.4	1075.7	1077.9	1080.1	1082.4	1084.7	1085.8
157.5°	1102.9	1101.5	1100.0	1098.6	1097.2	1097.3	1098.8	1100.3	1101.9	1103.5	1104.8
160°	1115.0	1113.9	1112.7	1111.6	1110.5	1110.5	1111.6	1112.7	1113.9	1115.0	1116.1
162.5°	1125.8	1124.7	1123.5	1122.4	1121.3	1121.2	1122.1	1123.2	1124.1	1125.1	1126.3
165°	1140.3	1139.1	1138.0	1136.9	1135.8	1135.4	1136.0	1136.6	1137.2	1137.7	1139.0
167.5°	1151.0	1149.9	1148.7	1147.6	1146.5	1146.2	1146.8	1147.2	1147.8	1148.3	1149.6
170°	1157.1	1156.0	1154.8	1153.7	1152.6	1152.2	1152.6	1152.9	1153.3	1153.7	1155.0
172.5°	1161.1	1160.0	1158.9	1157.8	1156.7	1156.3	1156.7	1157.0	1157.4	1157.8	1159.0
175°	1166.3	1165.1	1163.7	1162.4	1161.1	1160.6	1161.0	1161.4	1161.7	1162.1	1163.5
177.5°	1167.2	1166.2	1165.1	1164.0	1163.0	1162.5	1162.7	1162.8	1163.0	1163.2	1164.2
180°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6	1161.6
2.5°	1156.0	1157.9	1159.8	1160.5	1160.2	1159.8	1159.4	1159.0
5°	1146.8	1148.9	1151.0	1151.8	1151.0	1150.3	1149.6	1148.9
7.5°	1128.3	1128.9	1129.5	1129.2	1128.0	1126.8	1125.5	1124.3
10°	1109.7	1109.0	1108.3	1107.2	1105.8	1104.5	1103.0	1101.6
12.5°	1088.4	1087.1	1085.8	1084.1	1081.7	1079.4	1077.1	1074.8
15°	1048.6	1044.2	1039.7	1036.3	1034.0	1031.7	1029.4	1027.0
17.5°	1003.6	998.3	993.1	988.4	984.4	980.4	976.4	972.3
20°	972.2	966.4	960.5	955.1	949.9	944.8	939.6	934.5
22.5°	937.8	930.3	922.7	917.0	913.2	909.3	905.5	901.7
25°	880.7	871.1	861.5	854.9	851.4	848.0	844.5	841.0
27.5°	826.2	815.0	803.8	795.5	790.0	784.3	778.8	773.2
30°	787.7	775.8	763.8	754.7	748.5	742.1	735.9	729.5
32.5°	749.0	735.4	721.8	712.0	706.2	700.2	694.3	688.3
35°	688.5	673.8	659.1	649.2	644.0	638.9	633.7	628.6
37.5°	629.6	613.4	597.2	586.1	580.3	574.3	568.5	562.6
40°	590.2	573.6	557.0	545.7	539.6	533.5	527.4	521.4
42.5°	550.4	533.2	516.1	504.5	498.7	492.8	486.9	481.0
45°	492.4	475.9	459.2	448.1	442.5	437.0	431.3	425.7
47.5°	436.0	419.5	403.1	392.3	387.2	382.1	377.0	371.9
50°	399.8	383.7	367.6	357.0	352.1	347.2	342.3	337.4
52.5°	365.6	350.1	334.5	324.5	319.9	315.4	310.9	306.3
55°	313.6	299.6	285.6	276.3	271.9	267.4	263.0	258.6
57.5°	266.3	253.5	240.7	232.3	228.6	224.8	221.1	217.4
60°	233.7	221.8	209.8	202.1	198.3	194.6	190.8	187.1
62.5°	205.4	194.1	182.7	175.9	173.6	171.4	169.1	166.9
65°	167.0	159.1	151.1	146.8	146.1	145.4	144.7	144.0
67.5°	134.8	131.2	127.5	125.3	124.6	123.8	123.1	122.4
70°	117.2	114.9	112.6	111.0	110.0	109.1	108.1	107.2
72.5°	102.0	100.1	98.1	96.9	96.3	95.7	95.1	94.6
75°	80.8	79.2	77.6	76.6	76.4	76.1	75.9	75.7
77.5°	61.2	60.3	59.3	58.7	58.3	57.9	57.6	57.2
80°	48.6	47.7	46.7	46.3	46.3	46.3	46.3	46.3
82.5°	36.8	36.1	35.6	35.3	35.3	35.3	35.3	35.3
85°	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
87.5°	10.1	10.1	10.1	10.1	10.2	10.3	10.4	10.5
90°	18.7	19.6	20.6	21.2	21.6	22.0	22.3	22.7
92.5°	20.5	21.0	21.5	21.9	22.1	22.3	22.5	22.7
95°	34.7	35.6	36.6	37.0	36.8	36.6	36.4	36.2
97.5°	45.5	46.2	47.0	47.5	47.7	47.9	48.1	48.3
100°	51.0	52.5	54.0	54.9	55.3	55.7	56.1	56.4
102.5°	53.2	55.2	57.1	58.4	58.9	59.4	60.0	60.4
105°	55.5	57.5	59.6	61.0	61.8	62.5	63.2	64.0
107.5°	67.7	65.6	63.5	62.9	63.6	64.3	65.1	65.8
110°	110.0	91.3	72.5	63.5	64.2	65.0	65.8	66.5





TEST NUMBER: P331732-927

CATALOG NUMBER: SA2XXRDIP-C865D1080U927-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	235.2	166.9	98.6	64.8	65.4	66.0	66.6	67.2
115°	346.3	259.7	173.0	122.9	109.5	96.0	82.5	69.1
117.5°	533.6	512.6	491.7	459.1	414.8	370.5	326.2	281.9
120°	621.8	624.0	626.3	614.7	589.5	564.2	538.9	513.7
122.5°	659.7	661.1	662.4	660.6	655.8	650.9	645.9	641.0
125°	714.2	715.5	716.8	717.8	718.4	718.9	719.5	720.0
127.5°	764.6	766.5	768.4	769.4	769.5	769.7	769.8	769.8
130°	796.5	798.6	800.7	801.6	801.5	801.2	801.1	800.9
132.5°	827.6	829.4	831.2	831.9	831.7	831.6	831.4	831.2
135°	872.0	873.9	875.7	876.5	876.1	875.7	875.4	875.0
137.5°	913.1	915.0	916.8	917.4	916.8	916.2	915.5	914.9
140°	939.8	941.5	943.2	943.6	942.6	941.7	940.7	939.8
142.5°	964.4	966.0	967.5	967.8	966.9	965.9	965.0	964.1
145°	998.9	1000.1	1001.5	1001.6	1000.8	999.8	998.9	997.9
147.5°	1028.8	1029.8	1030.8	1030.9	1030.1	1029.3	1028.5	1027.7
150°	1047.3	1048.5	1049.6	1049.6	1048.7	1047.8	1046.9	1045.9
152.5°	1064.1	1065.3	1066.4	1066.4	1065.1	1063.9	1062.6	1061.4
155°	1086.9	1088.1	1089.2	1088.9	1087.4	1086.0	1084.5	1083.0
157.5°	1106.0	1107.3	1108.6	1108.5	1107.1	1105.6	1104.1	1102.6
160°	1117.2	1118.3	1119.4	1119.4	1118.1	1116.7	1115.5	1114.1
162.5°	1127.6	1128.9	1130.2	1130.0	1128.4	1126.8	1125.1	1123.6
165°	1140.3	1141.6	1143.0	1143.0	1141.6	1140.3	1139.0	1137.7
167.5°	1151.0	1152.2	1153.6	1153.3	1151.7	1150.0	1148.3	1146.6
170°	1156.3	1157.6	1159.0	1158.7	1157.1	1155.4	1153.7	1152.0
172.5°	1160.4	1161.7	1163.0	1162.8	1161.1	1159.4	1157.8	1156.0
175°	1164.7	1166.1	1167.4	1167.1	1165.2	1163.3	1161.5	1159.6
177.5°	1165.2	1166.3	1167.4	1167.2	1165.9	1164.5	1163.2	1161.8
180°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8

(END OF REPORT)