

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: P331733-930

Luminaire Tested: **SA2XXRDIP-C865D1080U930-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331733-930
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-C865D1080U930-4F0-1E-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

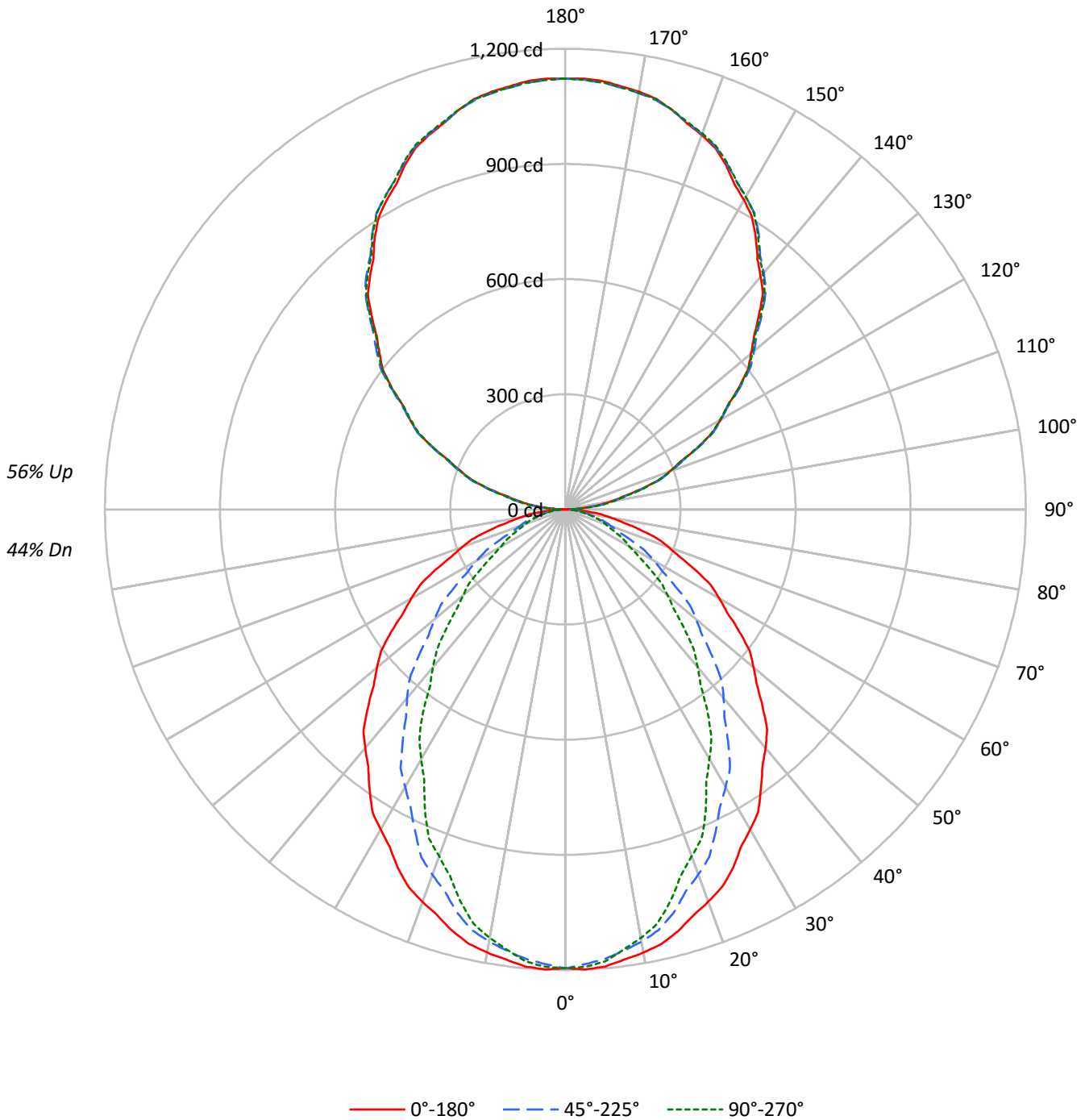
Lumens per Lamp: N/A
Luminaire Lumens: 5601.2 lumens
Efficiency: N/A
Efficacy: 85.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

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°	19302	19302	19302
5°	19376	19060	19164
10°	19226	18748	18589
15°	19005	18191	17668
20°	18699	17399	16526
25°	18387	16498	15419
30°	17952	15571	13998
35°	17527	14564	12751
40°	17102	13523	11310
45°	16600	12353	10003
50°	16088	11170	8721
55°	15564	9897	7491
60°	14951	8561	6219
65°	14258	7194	5662
70°	13430	5925	5207
75°	12420	5402	4860
80°	10962	4826	4426
85°	8633	3798	3798



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.9	2.0
10°-20°	307.2	5.5
20°-30°	431.5	7.7
30°-40°	470.5	8.4
40°-50°	432.6	7.7
50°-60°	339.7	6.1
60°-70°	221.5	4.0
70°-80°	114.2	2.0
80°-90°	34.1	0.6
90°-100°	71.1	1.3
100°-110°	220.9	3.9
110°-120°	377.5	6.7
120°-130°	496.5	8.9
130°-140°	557.2	9.9
140°-150°	546.4	9.8
150°-160°	458.3	8.2
160°-170°	304.0	5.4
170°-180°	106.2	1.9
0°-30°	850.6	15.2
0°-40°	1321.1	23.6
0°-60°	2093.4	37.4
0°-90°	2463.2	44.0
90°-120°	669.5	12.0
90°-150°	2269.5	40.5
90°-180°	3138.0	56.0
0°-180°	5601.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1196	1196	1196	1196	1196	
5°	1196	1190	1176	1185	1182	113
15°	1137	1124	1088	1068	1057	320
25°	1032	995	926	883	866	474
35°	889	832	739	673	647	556
45°	727	652	541	467	438	561
55°	553	467	352	289	266	494
65°	373	285	188	153	148	370
75°	199	126	87	79	78	211
85°	47	25	20	20	20	55
90°	1	13	33	31	32	5
95°	49	58	61	60	59	56
105°	204	206	208	210	210	215
115°	379	384	383	382	379	375
125°	551	559	557	554	553	492
135°	713	723	726	724	722	551
145°	866	872	878	879	875	541
155°	990	992	995	1000	997	455
165°	1077	1076	1076	1082	1078	304
175°	1120	1118	1116	1122	1117	106
180°	1122	1122	1122	1122	1122	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1195.5	1195.5	1195.5	1195.5	1195.5	1195.5	1195.5	1195.5	1195.5	1195.5	1195.5
2.5°	1199.8	1198.8	1197.8	1196.9	1196.0	1194.4	1192.3	1190.2	1188.1	1185.9	1187.9
5°	1195.5	1194.3	1193.0	1191.8	1190.7	1188.5	1185.4	1182.3	1179.1	1176.0	1178.1
7.5°	1183.1	1181.6	1180.1	1178.7	1177.1	1174.6	1170.9	1167.3	1163.6	1159.9	1160.6
10°	1172.7	1171.0	1169.4	1167.7	1166.0	1162.8	1158.0	1153.2	1148.3	1143.5	1142.8
12.5°	1159.8	1157.6	1155.6	1153.6	1151.4	1147.4	1141.2	1135.1	1128.9	1122.7	1121.4
15°	1137.0	1134.4	1131.7	1129.1	1126.4	1121.0	1112.9	1104.7	1096.5	1088.3	1083.8
17.5°	1109.1	1105.1	1101.1	1097.0	1093.0	1085.7	1075.2	1064.7	1054.3	1043.7	1038.4
20°	1088.3	1083.5	1078.7	1073.9	1069.1	1060.7	1048.6	1036.7	1024.7	1012.6	1006.6
22.5°	1065.8	1060.5	1055.1	1049.7	1044.3	1034.9	1021.2	1007.7	994.2	980.6	972.8
25°	1032.1	1024.4	1016.7	1009.0	1001.4	989.5	973.6	957.8	941.9	926.1	916.2
27.5°	991.4	983.0	974.7	966.3	958.0	944.9	926.9	909.1	891.1	873.3	861.8
30°	962.9	953.7	944.6	935.5	926.3	912.2	892.9	873.7	854.4	835.2	823.0
32.5°	935.1	924.5	913.8	903.1	892.4	877.3	857.7	838.0	818.5	798.8	784.9
35°	889.2	877.0	864.8	852.5	840.2	823.5	802.3	781.2	760.1	738.9	723.7
37.5°	843.4	830.0	816.5	803.0	789.5	771.5	749.0	726.4	703.9	681.3	664.6
40°	811.4	797.0	782.5	768.1	753.7	734.8	711.5	688.2	664.9	641.6	624.4
42.5°	778.5	763.3	748.1	733.0	717.7	698.1	674.0	649.9	625.8	601.7	584.1
45°	727.0	710.9	694.8	678.7	662.6	641.9	616.7	591.4	566.1	541.0	523.8
47.5°	676.8	659.7	642.7	625.6	608.5	586.9	560.9	534.8	508.7	482.7	465.8
50°	640.5	623.4	606.3	589.2	572.2	550.4	524.0	497.5	471.1	444.7	428.0
52.5°	605.0	587.1	569.3	551.5	533.6	511.8	485.9	460.0	434.1	408.3	392.2
55°	552.9	534.1	515.4	496.6	477.8	455.4	429.5	403.5	377.6	351.6	337.2
57.5°	499.4	480.1	460.9	441.6	422.5	400.4	375.4	350.4	325.5	300.5	287.3
60°	463.0	443.8	424.6	405.4	386.1	364.1	339.3	314.5	289.8	265.1	252.8
62.5°	427.5	408.3	389.1	369.8	350.6	329.2	305.6	282.0	258.4	234.7	223.1
65°	373.2	353.8	334.3	314.8	295.4	274.8	253.2	231.5	209.9	188.3	180.1
67.5°	320.9	301.6	282.3	262.9	243.5	224.1	204.7	185.2	165.8	146.3	142.5
70°	284.5	265.8	247.0	228.3	209.5	191.8	175.3	158.7	142.1	125.5	123.1
72.5°	249.9	232.0	213.9	196.0	178.0	162.3	149.0	135.7	122.4	109.1	107.0
75°	199.1	182.2	165.4	148.5	131.8	119.3	111.0	102.9	94.7	86.6	84.9
77.5°	149.1	134.3	119.5	104.8	90.0	80.7	76.7	72.8	68.9	64.9	63.9
80°	117.9	105.7	93.4	81.1	68.9	61.6	59.1	56.7	54.3	51.9	51.0
82.5°	89.4	79.8	70.2	60.7	51.1	45.5	43.9	42.2	40.6	39.0	38.4
85°	46.6	41.5	36.4	31.4	26.3	23.5	22.7	22.0	21.3	20.5	20.5
87.5°	14.0	13.0	12.0	10.9	9.9	9.9	10.8	11.7	12.6	13.5	13.3
90°	1.0	3.5	6.0	8.6	11.1	14.6	19.2	23.9	28.5	33.2	32.7
92.5°	16.9	18.7	20.5	22.4	24.3	25.8	26.8	28.0	29.0	30.1	30.2
95°	49.2	51.4	53.5	55.5	57.6	58.9	59.4	59.8	60.2	60.6	60.6
97.5°	90.0	91.8	93.7	95.6	97.3	98.7	99.5	100.3	101.1	101.9	101.9
100°	120.3	122.0	123.7	125.3	127.0	128.2	128.8	129.4	130.0	130.7	130.7
102.5°	152.1	153.4	154.8	156.1	157.5	158.6	159.4	160.1	160.9	161.8	161.9
105°	203.6	204.2	204.9	205.5	206.1	206.7	207.1	207.5	207.9	208.3	208.8
107.5°	255.5	256.4	257.4	258.3	259.2	259.7	259.7	259.7	259.7	259.7	259.8
110°	288.9	290.1	291.4	292.6	293.9	294.6	294.6	294.6	294.6	294.6	294.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	325.2	326.4	327.8	329.0	330.3	330.8	330.6	330.4	330.3	330.1	329.6
115°	378.8	380.1	381.3	382.6	383.8	384.3	383.8	383.4	383.0	382.6	382.4
117.5°	432.2	433.9	435.6	437.2	439.0	439.2	438.1	436.8	435.7	434.5	434.0
120°	467.8	469.5	471.2	472.9	474.6	474.6	472.9	471.2	469.5	467.8	467.8
122.5°	500.4	502.5	504.4	506.5	508.5	508.9	507.8	506.5	505.4	504.2	503.7
125°	551.1	553.1	555.0	556.8	558.7	559.4	558.7	558.2	557.5	556.8	556.2
127.5°	600.6	603.0	605.4	607.8	610.2	611.1	610.3	609.5	608.8	608.0	607.2
130°	631.7	634.4	637.2	639.8	642.6	643.8	643.4	642.9	642.5	642.1	641.6
132.5°	666.5	668.8	671.0	673.2	675.5	676.6	676.7	676.8	676.9	676.9	676.0
135°	713.1	715.4	717.8	720.1	722.4	723.7	724.1	724.6	725.0	725.5	725.2
137.5°	762.1	764.1	766.0	767.8	769.7	770.9	771.5	772.1	772.6	773.1	773.0
140°	791.7	793.6	795.5	797.4	799.3	800.8	801.8	802.9	804.0	804.9	804.9
142.5°	822.1	823.9	825.8	827.7	829.6	830.9	831.6	832.3	833.1	833.8	834.0
145°	865.6	867.1	868.5	870.0	871.5	872.9	874.1	875.4	876.6	877.9	878.1
147.5°	904.4	906.2	907.9	909.7	911.5	912.8	913.6	914.5	915.3	916.2	916.6
150°	930.9	932.2	933.4	934.7	936.0	937.0	937.9	938.7	939.6	940.4	941.0
152.5°	954.4	955.7	956.9	958.2	959.4	960.6	961.6	962.6	963.7	964.7	965.5
155°	989.7	990.3	990.9	991.6	992.2	992.8	993.4	994.1	994.7	995.3	996.4
157.5°	1019.8	1020.2	1020.6	1021.0	1021.5	1021.8	1022.2	1022.6	1023.0	1023.4	1024.8
160°	1038.0	1038.4	1038.8	1039.2	1039.7	1039.9	1040.2	1040.4	1040.6	1040.8	1042.0
162.5°	1054.6	1054.7	1054.8	1054.8	1055.0	1055.1	1055.3	1055.5	1055.7	1056.0	1057.4
165°	1076.8	1076.6	1076.4	1076.1	1076.0	1075.9	1075.9	1075.9	1075.9	1075.9	1077.3
167.5°	1095.4	1094.7	1094.1	1093.5	1092.8	1092.5	1092.4	1092.4	1092.3	1092.3	1093.8
170°	1105.2	1104.6	1103.9	1103.3	1102.7	1102.3	1102.0	1101.8	1101.6	1101.4	1102.9
172.5°	1112.0	1111.4	1110.8	1110.1	1109.5	1109.1	1108.9	1108.6	1108.4	1108.2	1109.7
175°	1120.4	1119.7	1119.1	1118.4	1117.9	1117.3	1116.9	1116.5	1116.1	1115.6	1117.1
177.5°	1123.7	1123.2	1122.7	1122.3	1121.8	1121.3	1121.0	1120.6	1120.3	1120.0	1121.0
180°	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1195.5	1195.5	1195.5	1195.5	1195.5	1195.5	1195.5	1195.5
2.5°	1189.8	1191.7	1193.6	1194.4	1194.0	1193.6	1193.3	1192.9
5°	1180.3	1182.4	1184.6	1185.4	1184.6	1183.9	1183.2	1182.4
7.5°	1161.2	1161.8	1162.5	1162.1	1160.9	1159.7	1158.4	1157.2
10°	1142.1	1141.3	1140.6	1139.5	1138.1	1136.7	1135.2	1133.8
12.5°	1120.1	1118.8	1117.5	1115.7	1113.3	1110.9	1108.5	1106.1
15°	1079.2	1074.6	1070.1	1066.6	1064.2	1061.8	1059.4	1057.0
17.5°	1032.9	1027.4	1022.1	1017.2	1013.1	1009.0	1004.9	1000.7
20°	1000.6	994.6	988.6	982.9	977.6	972.3	967.0	961.8
22.5°	965.2	957.4	949.7	943.8	939.9	935.9	932.0	928.1
25°	906.4	896.5	886.6	879.9	876.3	872.7	869.1	865.5
27.5°	850.3	838.8	827.3	818.7	813.0	807.2	801.5	795.8
30°	810.7	798.4	786.1	776.7	770.3	763.8	757.3	750.8
32.5°	770.9	756.8	742.9	732.8	726.8	720.6	714.5	708.4
35°	708.6	693.5	678.3	668.1	662.8	657.5	652.2	646.9
37.5°	648.0	631.3	614.7	603.2	597.2	591.1	585.1	579.0
40°	607.4	590.4	573.2	561.6	555.4	549.1	542.8	536.6
42.5°	566.5	548.8	531.2	519.3	513.2	507.2	501.1	495.0
45°	506.8	489.8	472.6	461.2	455.4	449.7	443.9	438.1
47.5°	448.7	431.8	414.8	403.7	398.5	393.2	388.0	382.8
50°	411.5	394.8	378.3	367.5	362.4	357.3	352.3	347.2
52.5°	376.3	360.3	344.2	333.9	329.2	324.6	319.9	315.3
55°	322.8	308.3	293.9	284.4	279.8	275.2	270.7	266.1
57.5°	274.1	260.9	247.7	239.1	235.3	231.4	227.6	223.7
60°	240.5	228.3	216.0	208.0	204.1	200.2	196.4	192.6
62.5°	211.4	199.7	188.0	181.0	178.7	176.4	174.1	171.8
65°	171.9	163.7	155.6	151.1	150.3	149.7	149.0	148.2
67.5°	138.8	135.0	131.3	129.0	128.2	127.4	126.7	126.0
70°	120.7	118.3	115.9	114.2	113.2	112.3	111.3	110.3
72.5°	105.0	103.0	100.9	99.7	99.1	98.5	97.9	97.3
75°	83.2	81.5	79.8	78.8	78.6	78.4	78.1	77.9
77.5°	63.0	62.0	61.1	60.4	60.0	59.6	59.3	58.9
80°	50.0	49.1	48.1	47.6	47.6	47.6	47.6	47.6
82.5°	37.8	37.2	36.6	36.4	36.4	36.4	36.4	36.4
85°	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5
87.5°	13.0	12.7	12.5	12.3	12.4	12.4	12.5	12.5
90°	32.3	31.9	31.5	31.4	31.6	31.8	32.0	32.2
92.5°	30.2	30.3	30.5	30.5	30.6	30.6	30.7	30.7
95°	60.6	60.6	60.6	60.4	60.0	59.6	59.1	58.7
97.5°	101.9	101.9	101.9	101.9	101.8	101.8	101.7	101.7
100°	130.7	130.7	130.7	130.6	130.4	130.2	130.0	129.7
102.5°	162.1	162.2	162.4	162.4	162.2	162.0	161.8	161.6
105°	209.2	209.6	210.0	210.3	210.3	210.3	210.3	210.3
107.5°	260.0	260.2	260.3	259.9	259.0	258.0	257.1	256.1
110°	294.6	294.6	294.6	294.2	293.6	292.9	292.3	291.7



TEST NUMBER: P331733-930

CATALOG NUMBER: SA2XXRDIP-C865D1080U930-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	329.1	328.6	328.2	327.7	327.2	326.7	326.3	325.8
115°	382.2	382.0	381.7	381.3	380.7	380.1	379.4	378.8
117.5°	433.5	433.0	432.5	431.9	431.3	430.6	430.0	429.4
120°	467.8	467.8	467.8	467.5	466.9	466.3	465.6	465.0
122.5°	503.2	502.7	502.1	501.7	501.2	500.8	500.3	499.9
125°	555.6	555.0	554.3	553.9	553.7	553.5	553.3	553.1
127.5°	606.5	605.7	605.0	604.2	603.6	602.9	602.3	601.5
130°	641.2	640.8	640.4	639.8	639.0	638.1	637.2	636.4
132.5°	675.1	674.2	673.3	672.5	671.8	671.1	670.4	669.8
135°	725.0	724.8	724.6	724.1	723.5	722.9	722.3	721.6
137.5°	772.8	772.7	772.5	772.0	771.1	770.3	769.5	768.6
140°	804.9	804.9	804.9	804.5	803.7	802.9	802.0	801.2
142.5°	834.1	834.3	834.5	834.1	833.2	832.4	831.6	830.7
145°	878.3	878.6	878.7	878.4	877.6	876.8	875.9	875.1
147.5°	917.1	917.5	918.0	917.9	917.0	916.2	915.4	914.7
150°	941.7	942.3	943.0	943.0	942.3	941.7	941.0	940.4
152.5°	966.3	967.0	967.8	967.8	967.0	966.3	965.5	964.7
155°	997.4	998.5	999.6	999.7	999.1	998.5	997.8	997.2
157.5°	1026.2	1027.7	1029.1	1029.3	1028.3	1027.3	1026.3	1025.2
160°	1043.3	1044.6	1045.9	1046.0	1045.2	1044.4	1043.5	1042.7
162.5°	1058.8	1060.2	1061.7	1061.8	1060.9	1059.9	1058.8	1057.9
165°	1078.8	1080.3	1081.7	1081.9	1080.9	1079.9	1078.8	1077.7
167.5°	1095.3	1096.7	1098.2	1098.4	1097.3	1096.2	1095.1	1094.1
170°	1104.3	1105.8	1107.3	1107.4	1106.1	1104.9	1103.6	1102.4
172.5°	1111.2	1112.6	1114.1	1114.2	1113.0	1111.7	1110.4	1109.1
175°	1118.6	1120.1	1121.5	1121.6	1120.4	1119.1	1117.9	1116.6
177.5°	1122.0	1123.0	1124.0	1124.0	1123.0	1122.0	1121.0	1120.0
180°	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3

(END OF REPORT)