

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: P332665-830

Luminaire Tested: **SA4XXDIP-C1020D1205U830-4F0-1E-UDD-D1**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332665-830  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA4XXDIP-C1020D1205U830-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1205 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7899.5 lumens  
Efficiency: N/A  
Efficacy: 120.8 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

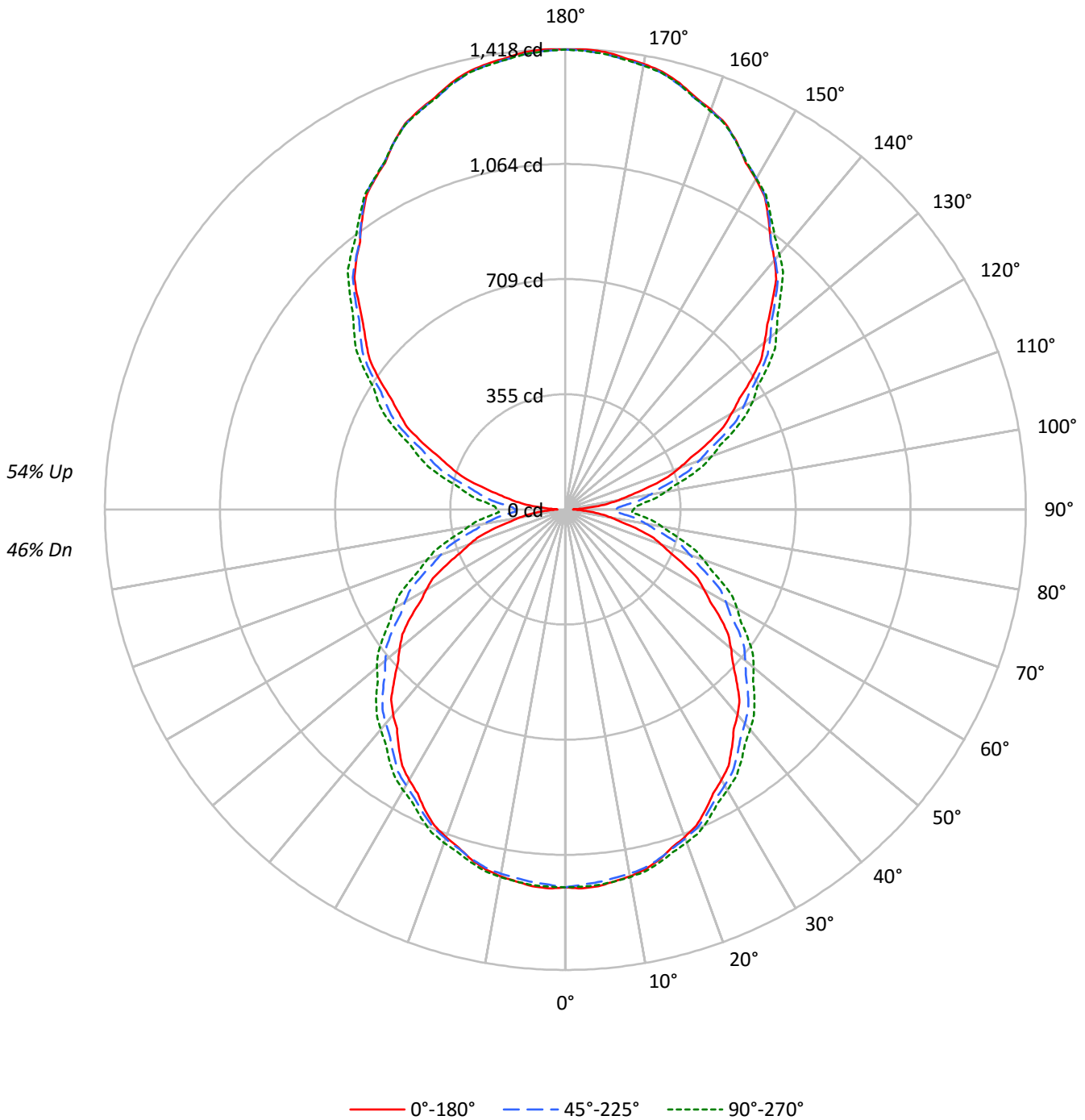
Input Watts (W): 65.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	98	98	98	98	81	81	81	67	67	67	53	53	53	46
1	96	91	87	83	88	84	80	77	70	67	65	57	55	53	45	44	43	37
2	87	79	73	67	79	73	67	62	61	56	53	50	47	44	39	37	35	30
3	79	69	62	55	72	64	57	52	53	48	44	43	40	37	34	32	30	25
4	72	61	53	47	66	56	49	43	47	42	37	38	34	31	31	28	25	21
5	66	54	46	40	60	50	43	37	42	36	32	34	30	27	27	24	22	18
6	61	48	40	34	56	45	37	32	38	32	28	31	27	23	25	22	19	16
7	56	44	36	30	51	40	33	28	34	28	24	28	24	20	23	19	17	14
8	52	40	32	26	48	37	30	25	31	25	21	26	21	18	21	17	15	13
9	48	36	28	23	44	33	27	22	28	23	19	24	19	16	19	16	13	11
10	45	33	26	21	41	31	24	20	26	21	17	22	18	15	18	14	12	10

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

	0°	45°	90°
0°	9395	9395	9395
5°	9424	9182	9208
10°	9366	9032	9024
15°	9282	8858	8809
20°	9156	8666	8599
25°	9013	8450	8368
30°	8859	8237	8131
35°	8684	8018	7924
40°	8544	7809	7708
45°	8336	7617	7522
50°	8161	7395	7326
55°	7979	7187	7096
60°	7697	6921	6885
65°	7387	6635	6628
70°	7013	6309	6327
75°	6486	5950	6056
80°	5904	5605	5788
85°	5170	5301	5633



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	110.2	1.4
10°-20°	315.7	4.0
20°-30°	477.4	6.0
30°-40°	577.6	7.3
40°-50°	610.7	7.7
50°-60°	574.7	7.3
60°-70°	476.8	6.0
70°-80°	334.9	4.2
80°-90°	193.6	2.5
90°-100°	205.8	2.6
100°-110°	359.9	4.6
110°-120°	525.4	6.7
120°-130°	650.7	8.2
130°-140°	709.0	9.0
140°-150°	686.0	8.7
150°-160°	574.7	7.3
160°-170°	382.4	4.8
170°-180°	133.9	1.7
0°-30°	903.4	11.4
0°-40°	1481.0	18.7
0°-60°	2666.4	33.8
0°-90°	3671.8	46.5
90°-120°	1091.1	13.8
90°-150°	3136.8	39.7
90°-180°	4228.0	53.5
0°-180°	7899.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1164	1164	1164	1164	1164	
5°	1165	1161	1152	1162	1161	111
15°	1117	1118	1114	1125	1125	315
25°	1022	1029	1033	1047	1049	470
35°	894	910	923	940	945	560
45°	745	770	795	816	824	576
55°	584	612	650	675	684	520
65°	404	446	490	521	533	400
75°	224	273	327	362	375	238
85°	69	124	182	220	235	74
90°	24	88	153	196	210	18
95°	83	136	197	234	247	87
105°	267	296	347	381	396	284
115°	485	498	536	563	572	479
125°	701	701	731	752	759	624
135°	900	906	915	933	938	696
145°	1091	1094	1095	1102	1104	683
155°	1248	1248	1247	1251	1247	574
165°	1359	1356	1354	1359	1356	383
175°	1414	1408	1407	1414	1407	134
180°	1416	1416	1416	1416	1416	



TEST NUMBER: P332665-830

CATALOG NUMBER: SA4XXDIP-C1020D1205U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1167.9	1167.2	1166.5	1165.8	1165.1	1163.9	1162.0	1160.2	1158.3	1156.4	1158.0
5°	1165.0	1164.1	1163.3	1162.4	1161.6	1160.1	1158.1	1156.0	1154.0	1152.0	1154.3
7.5°	1155.1	1154.6	1154.0	1153.6	1153.0	1152.0	1150.3	1148.6	1146.9	1145.2	1147.8
10°	1146.8	1146.5	1146.2	1145.9	1145.7	1144.7	1143.3	1141.9	1140.4	1139.0	1141.6
12.5°	1135.3	1135.3	1135.2	1135.1	1135.1	1134.5	1133.6	1132.6	1131.6	1130.6	1133.0
15°	1116.8	1117.1	1117.4	1117.7	1117.9	1117.7	1116.8	1116.0	1115.0	1114.2	1116.8
17.5°	1091.6	1092.4	1093.3	1094.1	1095.0	1095.3	1095.1	1095.0	1094.9	1094.7	1097.3
20°	1073.8	1074.7	1075.5	1076.4	1077.3	1077.9	1078.2	1078.5	1078.7	1079.0	1081.9
22.5°	1054.0	1055.1	1056.2	1057.3	1058.4	1059.2	1059.7	1060.3	1060.7	1061.3	1064.2
25°	1021.7	1023.4	1025.1	1026.9	1028.6	1029.9	1030.8	1031.7	1032.6	1033.4	1036.6
27.5°	985.7	988.3	990.8	993.3	995.9	997.9	999.2	1000.5	1001.8	1003.1	1006.2
30°	961.8	964.0	966.4	968.7	971.0	973.2	975.2	977.2	979.2	981.3	984.5
32.5°	935.7	938.5	941.2	944.1	946.8	949.3	951.6	953.9	956.1	958.4	962.0
35°	894.0	897.5	900.9	904.4	907.9	911.1	914.0	916.8	919.7	922.7	926.7
37.5°	852.0	856.0	860.0	864.0	868.0	871.8	875.3	878.9	882.6	886.2	890.2
40°	824.9	828.7	832.5	836.2	840.0	843.9	847.9	852.0	856.0	860.1	864.4
42.5°	793.6	797.9	802.1	806.3	810.5	815.0	819.7	824.5	829.2	834.1	838.9
45°	745.4	750.9	756.4	762.0	767.4	772.9	778.4	783.9	789.4	794.9	799.8
47.5°	699.3	704.9	710.6	716.3	722.0	728.0	734.3	740.7	747.2	753.5	758.6
50°	665.9	672.3	678.6	685.0	691.4	697.8	704.2	710.5	716.9	723.2	729.1
52.5°	632.5	638.9	645.3	651.7	658.1	664.9	672.1	679.5	686.7	694.1	699.8
55°	583.8	589.9	596.0	602.1	608.1	615.5	624.2	632.9	641.6	650.3	656.1
57.5°	529.3	536.9	544.4	552.0	559.5	567.5	576.2	584.8	593.4	602.1	609.0
60°	493.9	501.4	509.0	516.5	524.1	532.5	542.2	551.7	561.2	570.8	577.4
62.5°	459.5	467.7	476.0	484.2	492.4	501.2	510.9	520.4	530.0	539.5	546.2
65°	404.0	413.2	422.5	431.8	441.0	450.6	460.4	470.3	480.1	490.0	497.2
67.5°	350.5	360.4	370.2	380.1	389.9	400.1	410.7	421.2	431.8	442.3	449.7
70°	314.1	324.0	333.8	343.6	353.5	363.9	374.8	385.9	396.9	407.9	415.8
72.5°	278.6	288.7	298.8	308.9	319.0	329.8	341.5	353.2	365.0	376.6	384.2
75°	224.1	234.9	245.5	256.3	267.0	278.4	290.6	302.7	314.9	327.1	335.2
77.5°	173.3	184.6	196.0	207.4	218.8	230.7	243.6	256.3	269.0	281.7	289.9
80°	142.0	153.6	165.2	176.8	188.4	200.6	213.3	226.0	238.7	251.5	260.2
82.5°	110.7	122.8	134.9	146.9	158.9	171.4	184.1	196.8	209.6	222.3	231.2
85°	69.1	81.2	93.4	105.6	117.7	130.4	143.4	156.4	169.4	182.5	191.1
87.5°	39.2	51.6	63.9	76.3	88.6	101.3	114.4	127.5	140.5	153.6	162.3
90°	24.1	38.4	52.7	66.9	81.2	95.5	109.9	124.3	138.7	153.1	163.0
92.5°	43.3	56.7	70.2	83.7	97.2	110.8	124.7	138.5	152.3	166.1	175.1
95°	82.7	94.3	106.1	117.9	129.6	142.3	155.9	169.5	183.0	196.6	205.2
97.5°	130.2	140.2	150.1	160.0	170.0	181.9	195.7	209.4	223.2	237.0	245.3
100°	167.7	176.2	184.6	193.1	201.6	212.6	226.1	239.6	253.1	266.6	274.8
102.5°	207.9	214.9	222.0	228.9	235.9	245.9	259.0	272.0	285.1	298.1	306.4
105°	266.8	272.9	278.9	285.0	291.1	299.9	311.6	323.3	335.0	346.7	354.6
107.5°	331.2	336.3	341.3	346.4	351.4	359.0	369.3	379.7	389.9	400.2	408.0
110°	374.0	378.5	383.0	387.6	392.1	399.4	409.3	419.1	429.0	438.9	445.1



TEST NUMBER: P332665-830

CATALOG NUMBER: SA4XXDIP-C1020D1205U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	418.5	422.2	425.8	429.5	433.3	439.7	448.9	458.2	467.4	476.6	483.0
115°	485.2	487.9	490.5	493.0	495.7	501.3	510.2	519.0	527.7	536.5	542.6
117.5°	549.4	551.1	552.9	554.7	556.4	561.5	569.8	578.1	586.4	594.6	599.8
120°	591.3	593.1	594.9	596.8	598.6	603.4	611.1	618.7	626.4	634.0	638.7
122.5°	635.9	636.5	637.1	637.6	638.2	642.2	649.9	657.4	665.1	672.7	677.6
125°	700.6	700.3	700.0	699.7	699.4	702.8	709.7	716.7	723.8	730.8	735.7
127.5°	760.1	760.5	761.0	761.4	761.9	764.7	769.9	775.0	780.1	785.3	790.0
130°	801.1	801.5	802.0	802.4	802.9	805.4	810.0	814.6	819.3	824.0	828.7
132.5°	844.0	844.2	844.5	844.8	845.0	846.9	850.4	853.9	857.4	860.9	865.4
135°	899.5	900.9	902.4	903.8	905.3	907.0	909.1	911.1	913.1	915.1	919.3
137.5°	961.2	961.6	962.0	962.4	962.8	963.7	965.1	966.4	967.8	969.1	972.7
140°	1002.4	1002.6	1002.8	1003.0	1003.1	1003.4	1003.7	1004.0	1004.3	1004.6	1008.0
142.5°	1039.0	1039.4	1039.9	1040.3	1040.8	1040.8	1040.4	1040.0	1039.6	1039.2	1042.5
145°	1090.9	1091.6	1092.2	1092.9	1093.6	1094.1	1094.3	1094.6	1094.8	1095.0	1096.6
147.5°	1142.6	1143.4	1144.3	1145.2	1146.0	1146.4	1146.2	1146.0	1145.8	1145.7	1145.7
150°	1174.1	1174.8	1175.4	1176.1	1176.9	1177.1	1177.1	1177.1	1177.1	1177.1	1177.1
152.5°	1202.9	1203.3	1203.9	1204.4	1204.9	1205.3	1205.5	1205.7	1205.9	1206.1	1206.6
155°	1248.3	1248.3	1248.3	1248.3	1248.3	1248.2	1248.0	1247.7	1247.5	1247.3	1248.2
157.5°	1286.9	1286.5	1286.0	1285.6	1285.2	1284.9	1284.9	1284.8	1284.8	1284.7	1285.4
160°	1309.7	1309.5	1309.2	1308.9	1308.7	1308.4	1308.2	1308.0	1307.7	1307.5	1308.2
162.5°	1330.7	1330.0	1329.5	1328.8	1328.1	1327.8	1327.5	1327.3	1327.0	1326.7	1328.0
165°	1359.0	1358.2	1357.4	1356.8	1356.0	1355.4	1354.9	1354.4	1354.0	1353.5	1354.9
167.5°	1380.6	1379.6	1378.6	1377.5	1376.6	1376.0	1376.1	1376.1	1376.2	1376.2	1377.7
170°	1392.9	1391.7	1390.4	1389.2	1388.0	1387.5	1387.8	1388.0	1388.3	1388.6	1390.0
172.5°	1401.7	1400.6	1399.6	1398.5	1397.6	1397.0	1397.1	1397.2	1397.2	1397.3	1398.9
175°	1413.7	1412.5	1411.3	1410.0	1408.8	1408.1	1407.9	1407.6	1407.4	1407.1	1408.8
177.5°	1417.7	1416.6	1415.7	1414.8	1413.7	1413.2	1413.2	1413.2	1413.2	1413.2	1414.7
180°	1415.9	1415.9	1415.9	1415.9	1415.9	1415.9	1415.9	1415.9	1415.9	1415.9	1415.9



TEST NUMBER: P332665-830

CATALOG NUMBER: SA4XXDIP-C1020D1205U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8	1163.8
2.5°	1159.7	1161.3	1162.9	1163.6	1163.4	1163.1	1162.9	1162.7
5°	1156.6	1159.0	1161.3	1162.2	1162.0	1161.7	1161.4	1161.1
7.5°	1150.5	1153.0	1155.7	1156.8	1156.5	1156.2	1155.9	1155.7
10°	1144.2	1146.8	1149.4	1150.6	1150.3	1150.0	1149.7	1149.4
12.5°	1135.4	1137.7	1140.1	1141.3	1141.2	1141.1	1141.1	1141.0
15°	1119.5	1122.0	1124.6	1125.8	1125.5	1125.2	1124.9	1124.6
17.5°	1099.9	1102.7	1105.3	1106.5	1106.3	1106.1	1105.8	1105.6
20°	1084.8	1087.7	1090.6	1092.0	1092.0	1092.0	1092.0	1092.0
22.5°	1067.1	1070.0	1072.9	1074.6	1075.1	1075.4	1075.9	1076.4
25°	1039.8	1042.9	1046.1	1047.9	1048.2	1048.5	1048.8	1049.0
27.5°	1009.1	1012.0	1015.0	1016.6	1017.0	1017.4	1017.7	1018.0
30°	987.7	990.8	994.0	995.9	996.5	997.0	997.7	998.2
32.5°	965.6	969.3	973.0	975.1	975.6	976.2	976.8	977.4
35°	930.8	934.8	938.9	941.3	942.2	943.0	944.0	944.8
37.5°	894.4	898.5	902.6	905.1	906.1	907.0	907.9	908.8
40°	868.7	873.1	877.5	880.2	881.4	882.5	883.7	884.9
42.5°	843.7	848.5	853.3	856.1	857.1	858.0	858.9	859.8
45°	804.7	809.7	814.6	817.8	819.3	820.7	822.2	823.6
47.5°	763.6	768.7	773.9	777.3	779.0	780.8	782.5	784.3
50°	734.8	740.6	746.4	750.2	752.0	753.7	755.4	757.1
52.5°	705.7	711.4	717.3	721.0	722.7	724.4	726.2	727.9
55°	661.9	667.7	673.4	677.2	678.9	680.7	682.4	684.2
57.5°	615.9	622.7	629.6	633.9	635.5	637.2	638.8	640.4
60°	584.1	590.8	597.4	601.9	604.3	606.5	608.9	611.1
62.5°	552.8	559.5	566.2	570.6	573.0	575.2	577.6	579.9
65°	504.4	511.7	519.0	523.8	526.0	528.4	530.7	533.0
67.5°	457.0	464.4	471.7	476.5	478.8	481.1	483.3	485.6
70°	423.5	431.3	439.1	444.1	446.1	448.2	450.2	452.2
72.5°	391.8	399.4	407.0	411.9	414.2	416.4	418.7	420.9
75°	343.3	351.4	359.5	364.9	367.5	370.1	372.7	375.3
77.5°	298.2	306.4	314.6	320.2	322.9	325.7	328.5	331.3
80°	268.9	277.6	286.3	291.7	294.1	296.4	298.7	301.0
82.5°	240.2	249.1	258.0	263.7	266.3	268.8	271.4	273.9
85°	199.8	208.5	217.2	223.0	225.9	228.8	231.7	234.6
87.5°	171.0	179.7	188.4	194.1	196.7	199.3	202.0	204.6
90°	172.9	182.7	192.6	198.9	201.7	204.4	207.3	210.1
92.5°	184.2	193.2	202.3	208.1	210.8	213.3	215.9	218.6
95°	213.7	222.3	230.8	236.4	238.9	241.6	244.2	246.8
97.5°	253.8	262.3	270.8	276.3	278.7	281.3	283.7	286.3
100°	283.2	291.5	299.8	305.0	307.0	309.1	311.0	313.1
102.5°	314.7	323.0	331.2	336.6	339.0	341.5	343.9	346.4
105°	362.6	370.5	378.5	384.0	387.1	390.1	393.1	396.2
107.5°	415.8	423.6	431.4	436.3	438.4	440.4	442.4	444.5
110°	451.3	457.4	463.6	468.3	471.3	474.3	477.4	480.4





TEST NUMBER: P332665-830

CATALOG NUMBER: SA4XXDIP-C1020D1205U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	489.3	495.7	502.0	506.3	508.8	511.3	513.8	516.2
115°	548.7	554.9	561.0	565.0	566.8	568.5	570.3	572.1
117.5°	605.0	610.2	615.4	618.9	620.8	622.5	624.4	626.2
120°	643.2	647.8	652.3	656.0	658.8	661.7	664.5	667.2
122.5°	682.6	687.6	692.5	695.6	696.8	698.0	699.3	700.4
125°	740.7	745.8	750.8	753.9	755.2	756.5	757.7	758.9
127.5°	794.8	799.6	804.3	807.4	809.0	810.6	812.1	813.7
130°	833.4	838.1	842.8	845.6	846.3	847.2	847.9	848.7
132.5°	870.0	874.4	878.9	881.8	883.2	884.6	885.9	887.2
135°	923.4	927.6	931.7	934.3	935.3	936.3	937.4	938.3
137.5°	976.4	980.0	983.5	986.1	987.7	989.3	990.9	992.5
140°	1011.6	1015.1	1018.7	1021.1	1022.2	1023.4	1024.6	1025.9
142.5°	1045.8	1049.0	1052.3	1054.5	1055.6	1056.9	1058.0	1059.1
145°	1098.1	1099.6	1101.0	1102.0	1102.4	1102.9	1103.2	1103.7
147.5°	1145.8	1145.8	1145.8	1146.1	1146.8	1147.5	1148.2	1148.9
150°	1177.1	1177.1	1177.1	1177.0	1176.8	1176.6	1176.3	1176.1
152.5°	1207.2	1207.9	1208.4	1208.4	1207.8	1207.1	1206.5	1205.9
155°	1249.2	1250.2	1251.1	1251.1	1250.2	1249.2	1248.2	1247.3
157.5°	1286.2	1286.9	1287.6	1287.6	1286.8	1285.9	1285.1	1284.3
160°	1308.9	1309.7	1310.4	1310.1	1308.9	1307.7	1306.6	1305.3
162.5°	1329.4	1330.7	1332.0	1332.1	1330.9	1329.6	1328.4	1327.2
165°	1356.4	1357.8	1359.3	1359.5	1358.6	1357.6	1356.6	1355.7
167.5°	1379.1	1380.6	1382.1	1382.1	1380.5	1379.0	1377.5	1376.0
170°	1391.5	1392.9	1394.4	1394.2	1392.5	1390.8	1389.1	1387.4
172.5°	1400.6	1402.2	1403.9	1403.9	1402.1	1400.4	1398.7	1397.0
175°	1410.5	1412.2	1413.9	1413.9	1412.2	1410.5	1408.8	1407.1
177.5°	1416.0	1417.4	1418.7	1418.6	1417.0	1415.5	1413.9	1412.4
180°	1415.9	1415.9	1415.9	1415.9	1415.9	1415.9	1415.9	1415.9

(END OF REPORT)