

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: P332646

Luminaire Tested: **SA4XXDIP-C1020D810U835-4F0-1E-UDD-D**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332646  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA4XXDIP-C1020D810U835-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 810 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7445.6 lumens  
Efficiency: N/A  
Efficacy: 136.9 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

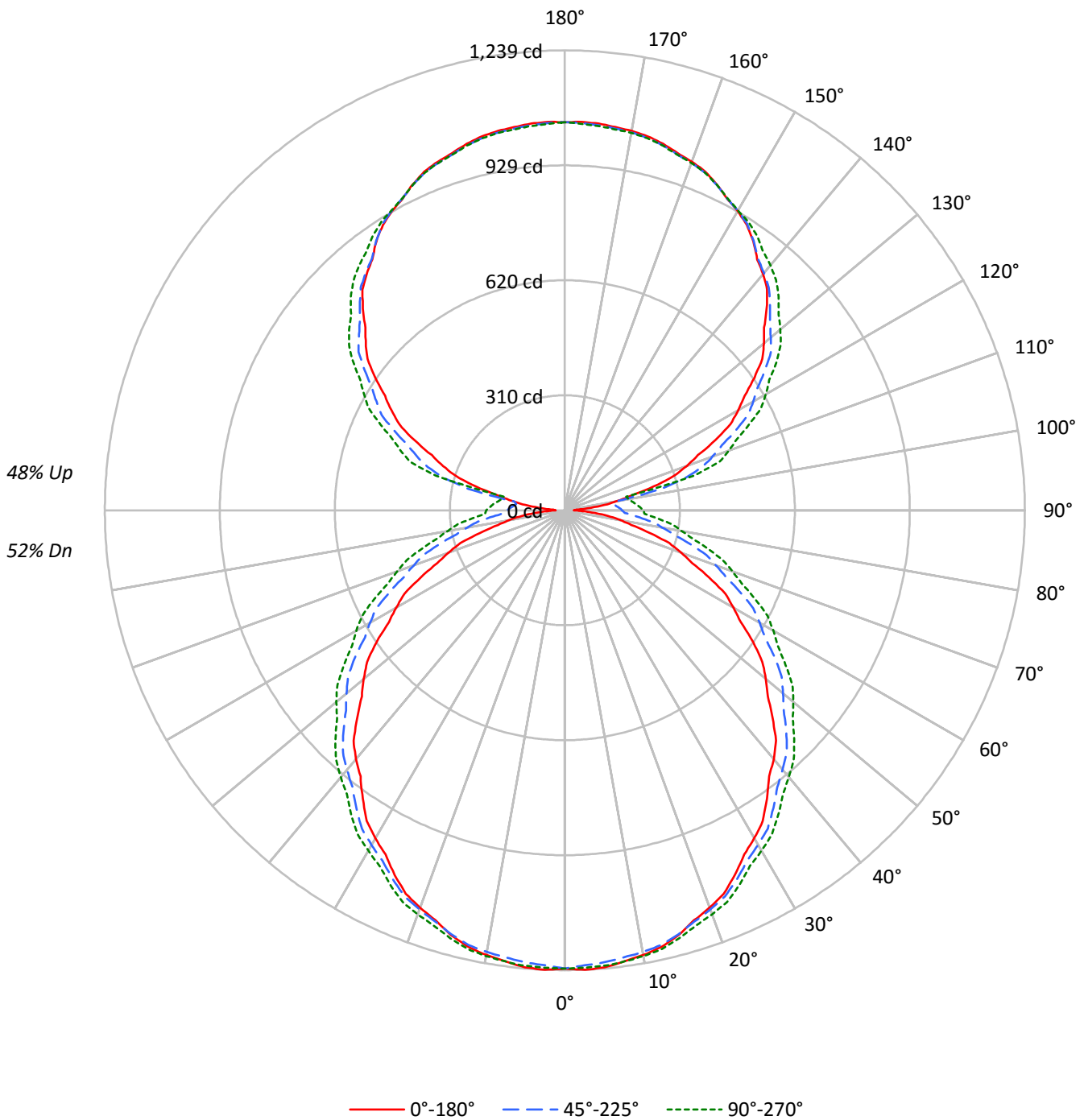
Input Watts (W): 54.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332646

CATALOG NUMBER: SA4XXDIP-C1020D810U835-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P332646

CATALOG NUMBER: SA4XXDIP-C1020D810U835-4F0-1E-UDD-D

**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	50	30	10	0	
RCR																						
0	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52				
1	97	92	88	84	90	86	82	78	73	70	67	61	59	57	50	48	47	42				
2	88	80	73	68	81	74	68	63	63	59	55	53	49	47	43	41	39	34				
3	80	70	62	56	74	65	58	52	55	50	46	46	42	39	38	35	33	28				
4	73	62	53	47	67	57	50	44	49	43	39	41	37	33	34	30	28	24				
5	67	55	46	40	62	51	43	38	44	38	33	37	32	28	30	27	24	21				
6	62	49	41	35	57	46	38	33	39	33	29	33	28	25	27	24	21	18				
7	57	44	36	30	52	41	34	29	35	29	25	30	25	22	25	21	18	16				
8	53	40	32	27	49	37	30	25	32	26	22	27	23	19	23	19	16	14				
9	49	37	29	24	45	34	27	22	29	24	20	25	21	17	21	17	15	13				
10	46	33	26	21	42	31	25	20	27	22	18	23	19	16	19	16	13	11				

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

	0°	45°	90°
0°	9968	9968	9968
5°	9998	9741	9769
10°	9937	9582	9575
15°	9848	9397	9346
20°	9714	9194	9123
25°	9563	8966	8879
30°	9399	8739	8627
35°	9213	8507	8407
40°	9065	8285	8178
45°	8844	8081	7981
50°	8658	7846	7773
55°	8466	7625	7529
60°	8166	7342	7306
65°	7837	7040	7032
70°	7439	6694	6714
75°	6882	6312	6425
80°	6266	5946	6141
85°	5484	5623	5977



TEST NUMBER: P332646

CATALOG NUMBER: SA4XXDIP-C1020D810U835-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	116.9	1.6
10°-20°	335.0	4.5
20°-30°	506.5	6.8
30°-40°	612.9	8.2
40°-50°	647.9	8.7
50°-60°	609.8	8.2
60°-70°	505.9	6.8
70°-80°	355.4	4.8
80°-90°	203.9	2.7
90°-100°	155.0	2.1
100°-110°	316.3	4.2
110°-120°	495.4	6.7
120°-130°	587.0	7.9
130°-140°	606.8	8.1
140°-150°	556.8	7.5
150°-160°	446.7	6.0
160°-170°	288.1	3.9
170°-180°	99.3	1.3
0°-30°	958.4	12.9
0°-40°	1571.3	21.1
0°-60°	2829.0	38.0
0°-90°	3894.2	52.3
90°-120°	966.7	13.0
90°-150°	2717.3	36.5
90°-180°	3551.0	47.7
0°-180°	7445.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1235	1235	1235	1235	1235	
5°	1236	1232	1222	1233	1232	117
15°	1185	1186	1182	1194	1193	334
25°	1084	1092	1096	1111	1113	499
35°	948	965	979	997	1002	594
45°	791	817	843	866	874	611
55°	619	649	690	716	726	552
65°	429	473	520	553	566	425
75°	238	289	347	384	398	253
85°	73	132	194	234	249	78
90°	24	88	154	197	212	17
95°	61	82	138	178	193	70
105°	248	281	335	374	360	260
115°	448	464	506	537	548	441
125°	623	627	658	686	696	557
135°	769	769	781	804	815	593
145°	885	886	886	895	902	553
155°	969	969	967	970	968	447
165°	1022	1018	1018	1024	1017	289
175°	1045	1041	1042	1048	1039	100
180°	1045	1045	1045	1045	1045	



TEST NUMBER: P332646

CATALOG NUMBER: SA4XXDIP-C1020D810U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7
2.5°	1239.1	1238.4	1237.6	1236.9	1236.1	1234.8	1232.8	1230.9	1228.9	1226.9	1228.6
5°	1236.0	1235.1	1234.2	1233.3	1232.4	1230.8	1228.7	1226.5	1224.4	1222.2	1224.7
7.5°	1225.5	1225.0	1224.4	1223.9	1223.3	1222.2	1220.4	1218.6	1216.8	1215.0	1217.8
10°	1216.7	1216.4	1216.1	1215.8	1215.5	1214.5	1213.0	1211.5	1209.9	1208.4	1211.2
12.5°	1204.5	1204.5	1204.4	1204.3	1204.3	1203.7	1202.7	1201.6	1200.6	1199.5	1202.1
15°	1184.9	1185.2	1185.5	1185.8	1186.1	1185.8	1184.9	1184.0	1183.0	1182.1	1184.9
17.5°	1158.1	1159.0	1159.9	1160.8	1161.8	1162.1	1161.9	1161.8	1161.6	1161.4	1164.2
20°	1139.3	1140.2	1141.1	1142.0	1143.0	1143.6	1143.9	1144.2	1144.5	1144.8	1147.9
22.5°	1118.2	1119.4	1120.6	1121.8	1122.9	1123.8	1124.3	1124.9	1125.4	1126.0	1129.1
25°	1084.0	1085.8	1087.6	1089.5	1091.3	1092.7	1093.6	1094.6	1095.5	1096.4	1099.8
27.5°	1045.8	1048.5	1051.2	1053.9	1056.6	1058.7	1060.1	1061.5	1062.9	1064.3	1067.5
30°	1020.4	1022.8	1025.3	1027.7	1030.2	1032.5	1034.6	1036.8	1038.9	1041.1	1044.5
32.5°	992.7	995.7	998.6	1001.6	1004.5	1007.2	1009.6	1012.0	1014.4	1016.8	1020.6
35°	948.5	952.2	955.8	959.5	963.2	966.6	969.7	972.7	975.8	978.9	983.2
37.5°	903.9	908.2	912.4	916.7	920.9	924.9	928.7	932.5	936.4	940.2	944.5
40°	875.2	879.2	883.2	887.2	891.2	895.3	899.6	903.9	908.2	912.5	917.1
42.5°	842.0	846.5	851.0	855.5	859.9	864.7	869.7	874.8	879.8	884.9	890.0
45°	790.8	796.7	802.5	808.4	814.2	820.0	825.9	831.7	837.5	843.4	848.6
47.5°	741.9	747.9	753.9	760.0	766.0	772.4	779.1	785.9	792.7	799.4	804.8
50°	706.5	713.3	720.0	726.8	733.5	740.3	747.1	753.8	760.6	767.3	773.5
52.5°	671.1	677.9	684.6	691.4	698.2	705.4	713.1	720.9	728.6	736.4	742.5
55°	619.4	625.9	632.3	638.8	645.2	653.0	662.3	671.5	680.7	689.9	696.1
57.5°	561.6	569.6	577.6	585.6	593.6	602.1	611.3	620.5	629.6	638.8	646.1
60°	524.0	532.0	540.0	548.0	556.0	565.0	575.2	585.3	595.4	605.6	612.6
62.5°	487.5	496.2	505.0	513.7	522.4	531.8	542.0	552.1	562.3	572.4	579.5
65°	428.6	438.4	448.3	458.1	467.9	478.1	488.5	499.0	509.4	519.9	527.5
67.5°	371.9	382.4	392.8	403.3	413.7	424.5	435.7	446.9	458.1	469.3	477.1
70°	333.2	343.7	354.1	364.5	375.0	386.1	397.7	409.4	421.1	432.8	441.1
72.5°	295.6	306.3	317.0	327.7	338.4	349.9	362.3	374.7	387.2	399.6	407.6
75°	237.8	249.2	260.5	271.9	283.3	295.4	308.3	321.2	334.1	347.0	355.6
77.5°	183.9	195.9	208.0	220.0	232.1	244.8	258.4	271.9	285.4	298.9	307.6
80°	150.7	163.0	175.3	187.6	199.9	212.8	226.3	239.8	253.3	266.8	276.1
82.5°	117.5	130.3	143.1	155.9	168.6	181.8	195.3	208.8	222.4	235.9	245.3
85°	73.3	86.2	99.1	112.0	124.9	138.3	152.1	165.9	179.7	193.6	202.8
87.5°	41.4	54.3	67.2	80.1	93.1	106.4	120.1	133.9	147.6	161.3	170.5
90°	24.5	38.7	52.9	67.1	81.3	95.7	110.3	124.9	139.5	154.1	164.0
92.5°	30.9	42.0	53.2	64.4	75.5	88.4	103.0	117.6	132.2	146.8	156.5
95°	61.0	65.2	69.4	73.7	77.9	86.4	99.2	111.9	124.7	137.5	146.8
97.5°	107.6	120.0	132.5	144.9	157.3	160.0	153.1	146.2	139.3	132.4	140.5
100°	143.4	154.6	165.7	176.8	187.9	187.5	175.5	163.5	151.5	139.5	144.8
102.5°	184.7	194.0	203.3	212.6	221.9	230.9	239.5	248.1	256.7	265.3	241.5
105°	247.8	255.0	262.2	269.4	276.5	286.3	298.5	310.7	323.0	335.2	344.4
107.5°	308.7	314.2	319.8	325.3	330.9	339.6	351.6	363.5	375.5	387.4	395.7
110°	348.8	353.7	358.5	363.3	368.1	376.4	388.2	400.0	411.8	423.6	431.0



TEST NUMBER: P332646

CATALOG NUMBER: SA4XXDIP-C1020D810U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	387.8	392.5	397.3	402.0	406.8	414.5	425.3	436.0	446.8	457.5	464.3
115°	447.7	451.0	454.3	457.6	460.9	467.3	477.0	486.7	496.3	506.0	513.1
117.5°	503.0	505.3	507.7	510.0	512.4	518.3	527.9	537.4	546.9	556.5	562.8
120°	539.4	541.0	542.6	544.2	545.8	551.0	559.8	568.5	577.2	586.0	592.5
122.5°	574.4	575.0	575.6	576.2	576.8	581.4	590.1	598.8	607.4	616.1	622.4
125°	623.2	623.6	624.0	624.4	624.8	628.6	636.0	643.3	650.6	658.0	664.3
127.5°	670.5	670.4	670.2	670.1	670.0	673.2	679.9	686.6	693.3	700.0	705.5
130°	700.0	699.9	699.8	699.6	699.5	702.1	707.6	713.0	718.5	723.9	729.6
132.5°	728.2	728.2	728.2	728.2	728.2	730.5	735.1	739.7	744.3	748.9	754.3
135°	769.0	768.8	768.7	768.5	768.3	769.7	772.5	775.4	778.2	781.0	786.3
137.5°	806.4	806.2	805.9	805.7	805.4	806.2	808.0	809.8	811.7	813.5	818.3
140°	830.8	830.8	830.9	830.9	830.9	831.3	832.0	832.6	833.3	833.9	838.4
142.5°	851.6	852.1	852.7	853.3	853.8	854.1	854.1	854.2	854.2	854.2	858.1
145°	884.9	885.1	885.3	885.6	885.8	885.9	885.9	885.9	885.9	885.9	887.9
147.5°	911.7	912.3	913.0	913.7	914.3	914.6	914.4	914.2	914.0	913.9	914.3
150°	931.1	931.4	931.8	932.2	932.6	932.7	932.5	932.4	932.2	932.0	932.0
152.5°	946.2	946.7	947.2	947.7	948.2	948.3	948.0	947.7	947.3	947.0	947.3
155°	968.8	968.9	969.1	969.3	969.5	969.3	968.8	968.2	967.7	967.2	967.9
157.5°	988.0	987.9	987.8	987.7	987.6	987.2	986.6	986.1	985.5	984.9	985.8
160°	999.3	998.7	998.2	997.7	997.2	996.8	996.7	996.5	996.3	996.1	997.2
162.5°	1009.3	1008.6	1007.9	1007.3	1006.6	1006.2	1006.0	1005.9	1005.7	1005.5	1006.6
165°	1021.9	1021.1	1020.2	1019.3	1018.5	1018.0	1018.0	1018.0	1018.0	1018.0	1019.4
167.5°	1031.9	1031.0	1030.1	1029.2	1028.3	1027.8	1027.7	1027.6	1027.5	1027.4	1028.9
170°	1037.6	1036.5	1035.5	1034.4	1033.4	1033.0	1033.1	1033.3	1033.5	1033.7	1035.0
172.5°	1041.3	1040.3	1039.2	1038.2	1037.2	1036.7	1036.9	1037.1	1037.2	1037.4	1038.8
175°	1045.4	1044.3	1043.3	1042.3	1041.2	1040.8	1041.0	1041.1	1041.3	1041.5	1043.0
177.5°	1047.3	1046.3	1045.3	1044.3	1043.4	1043.0	1043.3	1043.6	1043.9	1044.1	1045.2
180°	1045.4	1045.4	1045.4	1045.4	1045.4	1045.4	1045.4	1045.4	1045.4	1045.4	1045.4



TEST NUMBER: P332646

CATALOG NUMBER: SA4XXDIP-C1020D810U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7	1234.7
2.5°	1230.4	1232.1	1233.8	1234.5	1234.3	1234.0	1233.8	1233.6
5°	1227.1	1229.6	1232.1	1233.1	1232.8	1232.5	1232.2	1231.9
7.5°	1220.6	1223.3	1226.1	1227.3	1227.0	1226.7	1226.4	1226.1
10°	1213.9	1216.7	1219.5	1220.7	1220.4	1220.1	1219.8	1219.5
12.5°	1204.6	1207.1	1209.6	1210.9	1210.8	1210.7	1210.7	1210.6
15°	1187.7	1190.4	1193.2	1194.4	1194.1	1193.8	1193.5	1193.2
17.5°	1167.0	1169.9	1172.7	1174.0	1173.7	1173.5	1173.2	1173.0
20°	1150.9	1154.0	1157.1	1158.6	1158.6	1158.6	1158.6	1158.6
22.5°	1132.1	1135.2	1138.3	1140.1	1140.6	1141.0	1141.5	1142.0
25°	1103.2	1106.5	1109.9	1111.8	1112.1	1112.4	1112.7	1113.0
27.5°	1070.6	1073.7	1076.9	1078.6	1079.0	1079.4	1079.7	1080.1
30°	1047.9	1051.2	1054.6	1056.6	1057.2	1057.8	1058.5	1059.1
32.5°	1024.5	1028.4	1032.3	1034.5	1035.1	1035.7	1036.3	1037.0
35°	987.5	991.8	996.1	998.7	999.6	1000.5	1001.5	1002.4
37.5°	948.9	953.3	957.6	960.3	961.3	962.3	963.2	964.2
40°	921.7	926.3	931.0	933.9	935.1	936.3	937.6	938.8
42.5°	895.1	900.2	905.3	908.3	909.3	910.3	911.3	912.2
45°	853.8	859.1	864.3	867.7	869.2	870.7	872.3	873.8
47.5°	810.2	815.6	821.1	824.7	826.5	828.4	830.2	832.1
50°	779.6	785.8	791.9	795.9	797.8	799.6	801.4	803.3
52.5°	748.7	754.8	761.0	764.9	766.8	768.6	770.5	772.3
55°	702.2	708.4	714.5	718.5	720.3	722.2	724.0	725.9
57.5°	653.4	660.7	668.0	672.5	674.2	676.0	677.7	679.4
60°	619.7	626.8	633.8	638.6	641.1	643.5	646.0	648.4
62.5°	586.5	593.6	600.7	605.4	607.9	610.3	612.8	615.3
65°	535.2	542.9	550.6	555.7	558.1	560.6	563.0	565.5
67.5°	484.9	492.7	500.5	505.6	508.0	510.4	512.8	515.2
70°	449.3	457.6	465.9	471.2	473.3	475.5	477.6	479.8
72.5°	415.7	423.7	431.8	437.0	439.4	441.8	444.2	446.6
75°	364.2	372.8	381.4	387.1	389.9	392.7	395.4	398.2
77.5°	316.4	325.1	333.8	339.7	342.6	345.6	348.5	351.5
80°	285.3	294.5	303.7	309.5	312.0	314.5	316.9	319.4
82.5°	254.8	264.3	273.7	279.8	282.5	285.2	287.9	290.6
85°	212.0	221.2	230.4	236.6	239.7	242.7	245.8	248.9
87.5°	179.6	188.7	197.8	203.8	206.5	209.3	212.1	214.8
90°	174.0	183.9	193.9	200.3	203.1	205.9	208.7	211.5
92.5°	166.2	175.9	185.6	191.8	194.3	196.8	199.3	201.9
95°	156.2	165.5	174.8	181.0	183.9	186.9	189.8	192.7
97.5°	148.7	156.8	165.0	170.5	173.3	176.1	178.9	181.7
100°	150.2	155.5	160.8	164.7	167.0	169.3	171.7	174.0
102.5°	217.7	193.9	170.0	159.3	161.8	164.2	166.6	169.1
105°	353.7	362.9	372.2	374.9	371.1	367.3	363.5	359.7
107.5°	404.0	412.4	420.7	426.3	429.1	432.0	434.9	437.8
110°	438.5	445.9	453.3	458.5	461.5	464.4	467.4	470.4





TEST NUMBER: P332646

CATALOG NUMBER: SA4XXDIP-C1020D810U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	471.0	477.8	484.5	489.4	492.6	495.7	498.8	501.9
115°	520.2	527.3	534.4	539.0	541.2	543.3	545.5	547.6
117.5°	569.1	575.4	581.8	586.1	588.5	590.9	593.3	595.7
120°	599.0	605.4	611.9	616.2	618.4	620.5	622.6	624.7
122.5°	628.8	635.2	641.5	645.6	647.5	649.3	651.2	653.1
125°	670.7	677.0	683.4	687.6	689.6	691.6	693.6	695.7
127.5°	710.9	716.3	721.7	725.4	727.4	729.3	731.3	733.2
130°	735.3	741.0	746.7	750.5	752.3	754.2	756.0	757.9
132.5°	759.8	765.2	770.7	774.3	776.0	777.7	779.4	781.1
135°	791.6	796.8	802.1	805.8	808.0	810.2	812.4	814.6
137.5°	823.2	828.1	832.9	836.1	837.5	838.9	840.4	841.8
140°	842.9	847.5	852.0	855.1	856.8	858.5	860.2	861.9
142.5°	862.0	865.9	869.8	872.4	873.7	875.0	876.3	877.7
145°	889.9	891.9	894.0	895.7	897.3	898.9	900.5	902.1
147.5°	914.6	915.0	915.4	916.2	917.3	918.5	919.7	920.8
150°	932.0	932.0	932.0	932.1	932.3	932.4	932.6	932.8
152.5°	947.6	947.9	948.1	948.2	948.1	948.0	947.9	947.8
155°	968.6	969.3	970.0	970.1	969.5	969.0	968.5	968.0
157.5°	986.7	987.6	988.5	988.5	987.6	986.7	985.8	984.9
160°	998.2	999.3	1000.3	1000.3	999.3	998.2	997.2	996.1
162.5°	1007.6	1008.6	1009.7	1009.6	1008.4	1007.2	1006.1	1004.9
165°	1020.8	1022.2	1023.6	1023.5	1021.9	1020.4	1018.8	1017.2
167.5°	1030.5	1032.0	1033.5	1033.4	1031.7	1029.9	1028.2	1026.5
170°	1036.4	1037.8	1039.2	1039.0	1037.3	1035.6	1033.8	1032.1
172.5°	1040.2	1041.6	1043.0	1042.7	1040.9	1039.0	1037.1	1035.2
175°	1044.6	1046.2	1047.7	1047.5	1045.4	1043.3	1041.2	1039.1
177.5°	1046.4	1047.5	1048.6	1048.3	1046.6	1045.0	1043.3	1041.6
180°	1045.4	1045.4	1045.4	1045.4	1045.4	1045.4	1045.4	1045.4

(END OF REPORT)