

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: P332637

Luminaire Tested: **SA4XXDIP-C1020D590U835-4F0-1E-UDD-D**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332637
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-C1020D590U835-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

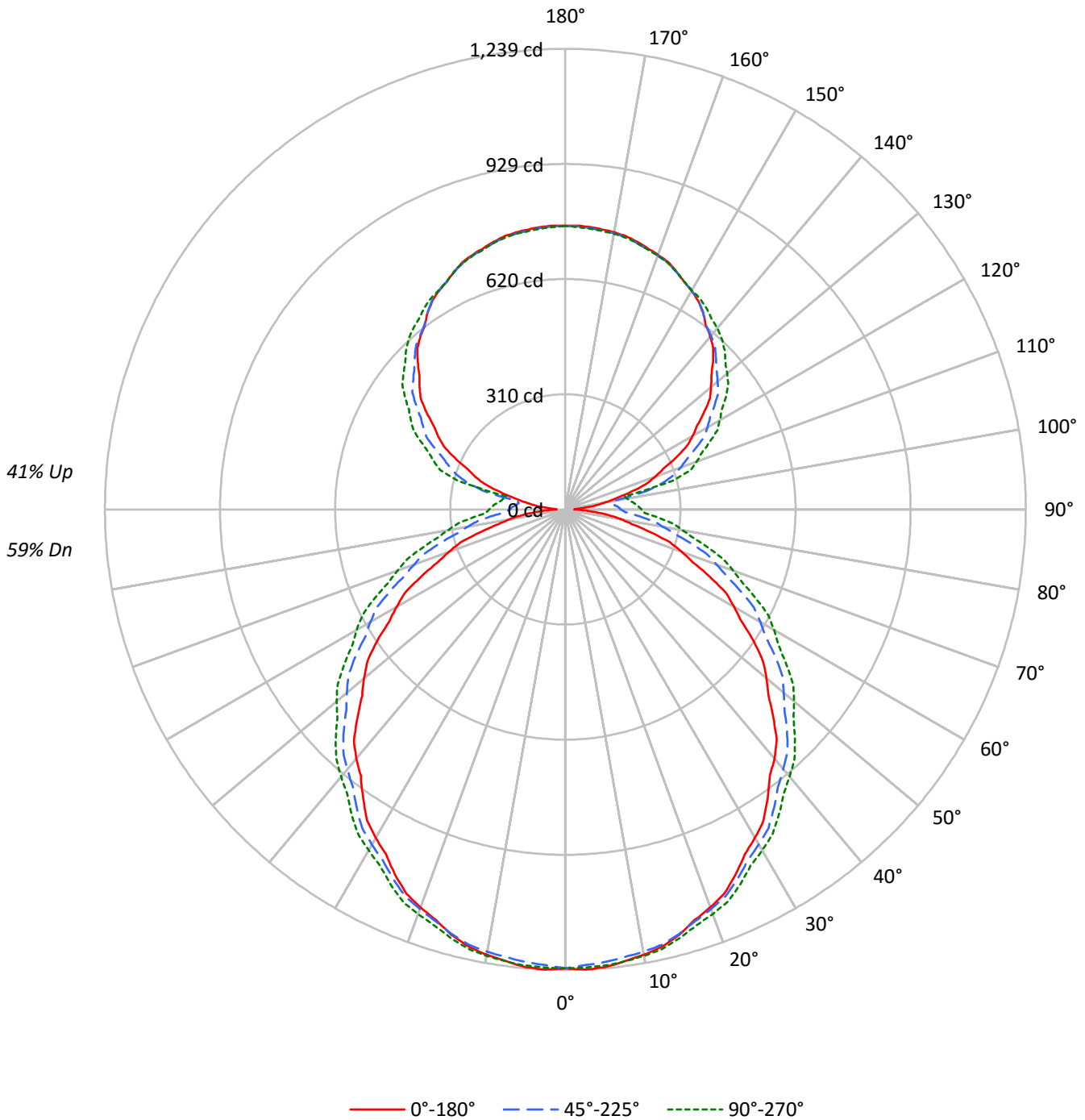
Lumens per Lamp: N/A
Luminaire Lumens: 6570.2 lumens
Efficiency: N/A
Efficacy: 134.6 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: General Diffuse

Input Watts (W): 48.8
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	50	30	10	0	
RCR																						
0	109	109	109	109	102	102	102	102	88	88	88	76	76	76	65	65	65	59				
1	99	94	89	85	92	88	84	80	76	73	70	65	63	61	55	54	52	47				
2	89	81	74	69	83	76	70	65	66	61	57	56	53	50	48	45	43	39				
3	81	71	63	57	75	66	59	54	58	52	48	50	45	42	42	39	36	32				
4	74	63	54	48	69	59	51	45	51	45	40	44	39	35	37	34	31	27				
5	68	56	47	41	63	52	44	39	45	39	34	39	34	30	33	30	27	23				
6	63	50	41	35	58	47	39	33	41	35	30	35	30	27	30	26	23	20				
7	58	45	37	31	54	42	35	29	37	31	26	32	27	23	28	24	21	18				
8	54	41	33	27	50	38	31	26	34	28	23	29	24	21	25	21	18	16				
9	50	37	29	24	46	35	28	23	31	25	21	27	22	19	23	19	16	14				
10	47	34	27	22	43	32	25	21	28	23	19	25	20	17	22	18	15	13				

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



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.9	1.8
10°-20°	335.0	5.1
20°-30°	506.5	7.7
30°-40°	612.9	9.3
40°-50°	647.9	9.9
50°-60°	609.8	9.3
60°-70°	505.9	7.7
70°-80°	355.4	5.4
80°-90°	203.1	3.1
90°-100°	145.4	2.2
100°-110°	254.6	3.9
110°-120°	377.4	5.7
120°-130°	437.3	6.7
130°-140°	446.6	6.8
140°-150°	407.0	6.2
150°-160°	325.9	5.0
160°-170°	210.2	3.2
170°-180°	72.4	1.1
0°-30°	958.4	14.6
0°-40°	1571.3	23.9
0°-60°	2829.0	43.1
0°-90°	3893.4	59.3
90°-120°	777.4	11.8
90°-150°	2068.3	31.5
90°-180°	2677.0	40.7
0°-180°	6570.2	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	86	149	191	205	16
95°	49	77	133	172	187	55
105°	184	216	269	306	299	194
115°	329	345	387	417	428	324
125°	456	459	490	517	527	407
135°	562	562	573	596	606	433
145°	646	646	646	655	662	404
155°	707	707	706	708	706	326
165°	746	743	743	747	742	211
175°	763	759	760	764	758	73
180°	763	763	763	763	763	



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CATALOG NUMBER: SA4XXDIP-C1020D590U835-4F0-1E-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°	41.3	54.1	66.9	79.7	92.5	105.8	119.4	133.1	146.7	160.4	169.5
90°	23.8	37.5	51.2	64.9	78.6	92.5	106.8	121.0	135.2	149.4	159.1
92.5°	28.2	39.3	50.5	61.6	72.8	85.4	99.7	113.9	128.1	142.3	151.8
95°	49.3	55.2	61.0	66.8	72.7	81.9	94.7	107.4	120.1	132.8	141.9
97.5°	82.9	94.4	105.8	117.2	128.6	133.5	131.8	130.1	128.4	126.8	134.9
100°	108.8	119.0	129.3	139.6	149.8	152.2	146.7	141.2	135.7	130.2	136.3
102.5°	138.9	147.6	156.2	164.9	173.6	182.7	192.1	201.6	211.0	220.5	205.3
105°	184.1	191.0	198.0	204.9	211.8	221.2	233.2	245.2	257.2	269.2	278.0
107.5°	228.5	233.9	239.3	244.7	250.1	258.7	270.3	281.9	293.5	305.1	313.2
110°	257.5	262.2	266.8	271.5	276.2	284.3	295.8	307.3	318.9	330.4	337.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	285.6	290.1	294.6	299.1	303.6	311.1	321.7	332.4	343.0	353.6	360.4
115°	328.9	332.0	335.2	338.3	341.5	347.9	357.6	367.3	377.0	386.7	393.7
117.5°	369.1	371.3	373.4	375.6	377.8	383.6	393.0	402.4	411.9	421.3	427.6
120°	395.4	396.8	398.2	399.7	401.1	406.2	415.0	423.8	432.5	441.3	447.7
122.5°	420.9	421.4	421.9	422.4	422.9	427.4	436.0	444.6	453.2	461.8	468.1
125°	456.2	456.4	456.6	456.8	457.0	460.8	468.2	475.6	483.1	490.5	496.7
127.5°	490.6	490.4	490.2	490.0	489.9	493.0	499.5	506.0	512.4	518.9	524.4
130°	511.8	511.6	511.5	511.3	511.1	513.7	519.0	524.3	529.6	534.8	540.5
132.5°	532.4	532.3	532.2	532.1	532.0	534.2	538.6	543.0	547.5	551.9	557.3
135°	561.8	561.7	561.5	561.4	561.3	562.5	565.2	567.9	570.5	573.2	578.3
137.5°	589.0	588.8	588.5	588.3	588.0	588.7	590.3	591.9	593.5	595.1	599.9
140°	606.8	606.8	606.7	606.7	606.6	606.9	607.4	608.0	608.6	609.1	613.5
142.5°	621.7	622.1	622.5	622.9	623.3	623.5	623.4	623.4	623.4	623.3	627.1
145°	646.0	646.0	646.1	646.2	646.3	646.3	646.3	646.3	646.3	646.3	648.3
147.5°	665.5	665.9	666.3	666.7	667.1	667.2	667.1	667.0	666.8	666.7	667.1
150°	679.6	679.8	680.0	680.2	680.4	680.5	680.3	680.2	680.1	679.9	679.9
152.5°	690.4	690.7	691.1	691.4	691.8	691.8	691.6	691.4	691.1	690.9	691.1
155°	706.8	706.9	707.0	707.1	707.3	707.1	706.8	706.4	706.0	705.6	706.1
157.5°	720.8	720.7	720.6	720.6	720.5	720.2	719.8	719.4	718.9	718.5	719.2
160°	729.0	728.6	728.2	727.9	727.5	727.2	727.1	727.0	726.8	726.7	727.5
162.5°	736.3	735.8	735.3	734.9	734.4	734.1	733.9	733.8	733.7	733.6	734.3
165°	745.5	744.9	744.3	743.6	743.0	742.7	742.7	742.7	742.7	742.7	743.7
167.5°	752.8	752.2	751.5	750.9	750.2	749.8	749.8	749.7	749.6	749.5	750.7
170°	757.0	756.2	755.4	754.7	753.9	753.6	753.7	753.8	754.0	754.1	755.1
172.5°	759.7	758.9	758.2	757.4	756.7	756.3	756.5	756.6	756.7	756.8	757.9
175°	762.7	761.9	761.1	760.4	759.6	759.3	759.4	759.6	759.7	759.8	760.9
177.5°	764.0	763.3	762.6	761.9	761.2	760.9	761.1	761.3	761.5	761.7	762.6
180°	762.7	762.7	762.7	762.7	762.7	762.7	762.7	762.7	762.7	762.7	762.7



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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°	178.5	187.6	196.7	202.6	205.3	208.1	210.8	213.6
90°	168.8	178.4	188.1	194.3	197.0	199.7	202.4	205.1
92.5°	161.2	170.6	180.0	186.0	188.5	191.0	193.5	196.0
95°	150.9	160.0	169.1	175.0	177.9	180.8	183.7	186.6
97.5°	143.0	151.2	159.3	164.7	167.5	170.3	173.0	175.8
100°	142.5	148.6	154.7	158.9	161.2	163.5	165.8	168.1
102.5°	190.1	174.9	159.7	153.3	155.7	158.1	160.6	163.0
105°	286.9	295.7	304.5	307.9	305.8	303.7	301.6	299.4
107.5°	321.4	329.5	337.6	343.0	345.7	348.4	351.1	353.8
110°	345.0	352.3	359.6	364.7	367.6	370.4	373.2	376.1



TEST NUMBER: P332637

CATALOG NUMBER: SA4XXDIP-C1020D590U835-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	367.1	373.9	380.7	385.5	388.5	391.4	394.3	397.3
115°	400.7	407.7	414.8	419.3	421.5	423.6	425.8	427.9
117.5°	434.0	440.3	446.7	451.0	453.4	455.9	458.3	460.7
120°	454.1	460.5	466.9	471.2	473.4	475.6	477.8	480.0
122.5°	474.4	480.7	487.0	491.1	493.1	495.0	497.0	499.0
125°	502.9	509.1	515.4	519.5	521.4	523.4	525.4	527.3
127.5°	529.8	535.3	540.7	544.5	546.5	548.4	550.4	552.4
130°	546.2	551.8	557.5	561.2	563.1	564.9	566.8	568.6
132.5°	562.7	568.1	573.5	577.1	578.8	580.6	582.3	584.1
135°	583.5	588.7	593.8	597.5	599.6	601.7	603.8	605.9
137.5°	604.6	609.4	614.2	617.3	618.7	620.2	621.7	623.1
140°	617.9	622.3	626.6	629.6	631.3	633.0	634.6	636.3
142.5°	630.9	634.7	638.5	641.0	642.3	643.7	645.0	646.3
145°	650.2	652.2	654.2	655.9	657.4	658.9	660.3	661.8
147.5°	667.4	667.8	668.1	668.8	669.9	671.1	672.2	673.3
150°	679.9	679.9	679.9	680.0	680.1	680.3	680.4	680.5
152.5°	691.3	691.5	691.7	691.8	691.7	691.6	691.5	691.5
155°	706.6	707.1	707.6	707.7	707.3	706.9	706.6	706.2
157.5°	719.8	720.5	721.1	721.1	720.5	719.8	719.2	718.5
160°	728.2	729.0	729.8	729.8	729.0	728.2	727.5	726.7
162.5°	735.1	735.8	736.6	736.6	735.7	734.8	734.0	733.1
165°	744.7	745.7	746.8	746.7	745.5	744.4	743.3	742.1
167.5°	751.8	752.9	754.0	753.9	752.7	751.4	750.1	748.9
170°	756.1	757.1	758.2	758.0	756.8	755.5	754.2	753.0
172.5°	758.9	759.9	760.9	760.7	759.4	758.0	756.6	755.2
175°	762.1	763.2	764.4	764.2	762.7	761.1	759.6	758.1
177.5°	763.4	764.2	765.0	764.8	763.6	762.4	761.1	759.9
180°	762.7	762.7	762.7	762.7	762.7	762.7	762.7	762.7

(END OF REPORT)