APPENDIX

A CREATION OF CONTOUR PLOTS

Following the instrumentation of the laminates with an 11 X 11 matrix of probes there is great difficulty in appreciating the potential field from the data in this form and monitoring changes in the field caused by fracture and other damage events. Consequently, a program was developed in Matlab to represent the 121 readings as a series of equi-potential contours. This will have the advantage of ease of representation and secondly a computer program would always interpret different sets of data in the same way, removing subjective judgements about what potential field ought to look like.

Figure A 1, shows an example of the individual measurements for CP 1 sample. The data is taken from Figure 7. 1 and the potential values are expressed in mV.

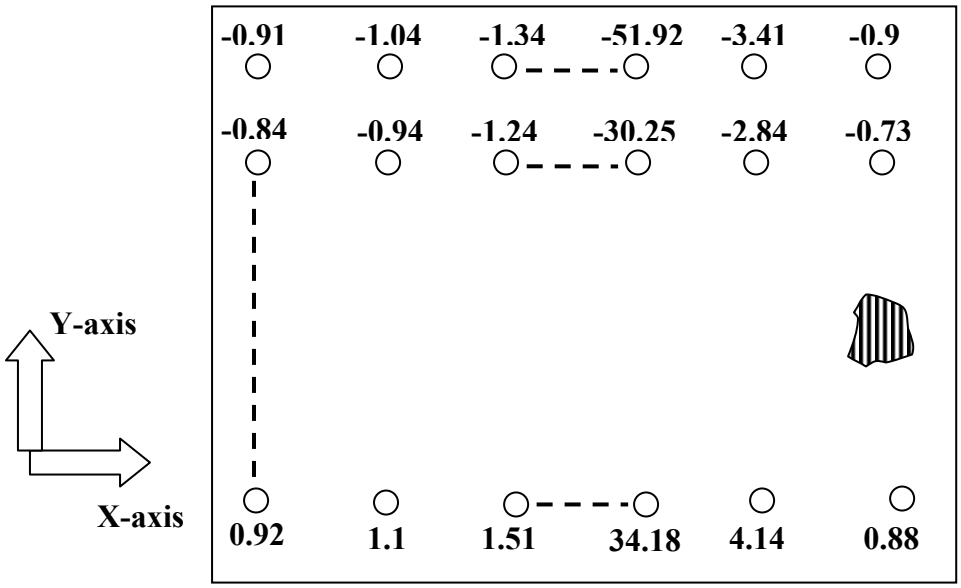

Figure A 1: Experimentally obtained potential reading for CP1; data is taken from Figure 7.1.

In the Matlab program, shown in page 249, it is assumed that the potential distribution on the surface of the laminate is represented by a surface. The 121 measurements are points on that surface. The contour plotting program establishes the minimum and maximum potential values and positions contours of equi-potential on the surface. The number of contours occupying the potential range between minimum and maximum can be specified. Typical values used were 30. Where contours were drawn between the original data points, a linear interpolation of potential was assumed. The potential distributions calculated using finite element analysis in Chapter 9, show that in regions of high potential gradient, close to the points of current introduction, there will be some errors associated with this. However, for the potential gradient found overmuch of the surface laminates the errors will be less than a few percent.

Examples of the application of the program to the potential distribution shown in Figure A 1 and using a range of contour interval is shown in Figure A 2-Figure A 6. It can be seen that the general characteristics of this distribution with two regions of rapidly changing potential surrounding the points of current entry and exit, with the very flat potential distribution between them is clearly shown. The general extend of the regions of high and low potential gradient is largely invariant with contour number and encourages the view that the contour program reproducibly represents the potential field associated with the discrete individual potential measurements.

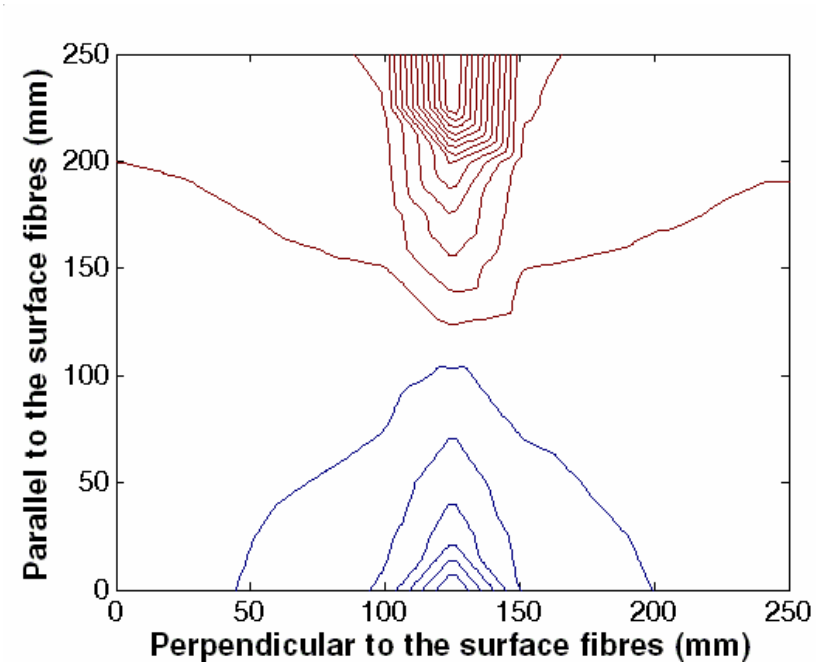

Figure A 2: Potential contour plot represented by 20 contour lines.

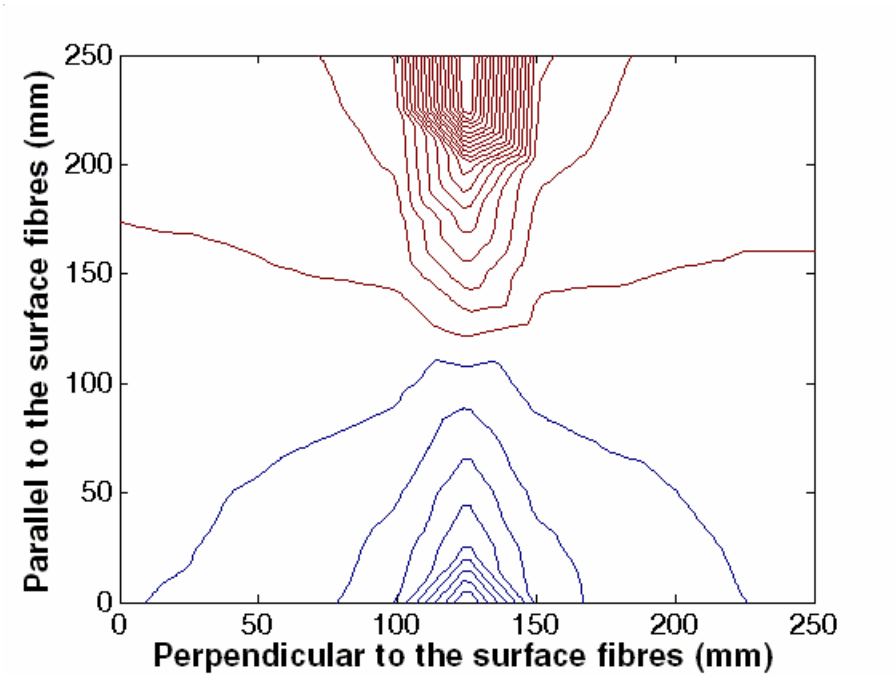

Figure A 3: Potential contour plot represented by 30 contour lines.

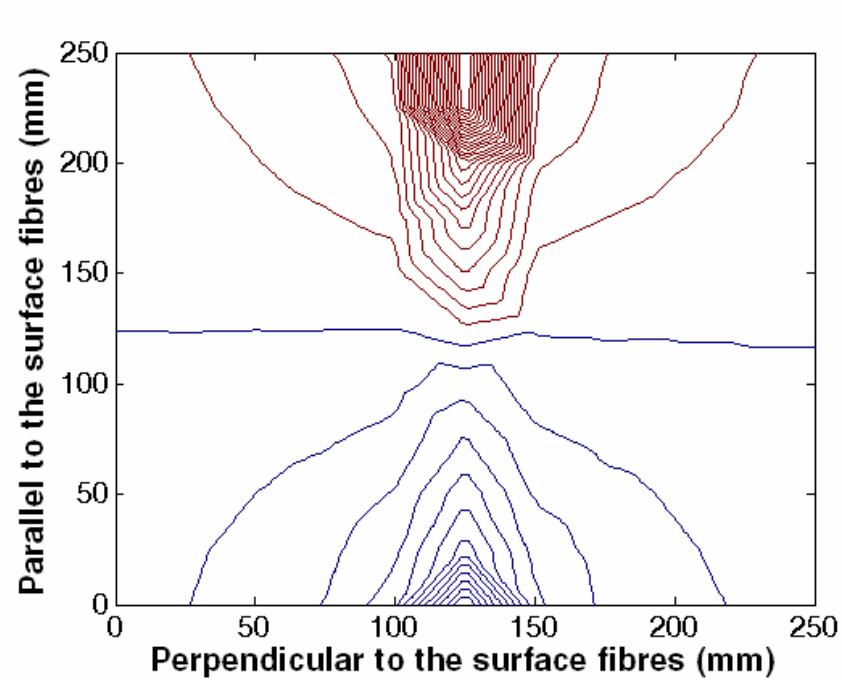

Figure A 4: Potential contour plot represented by 40 contour lines.

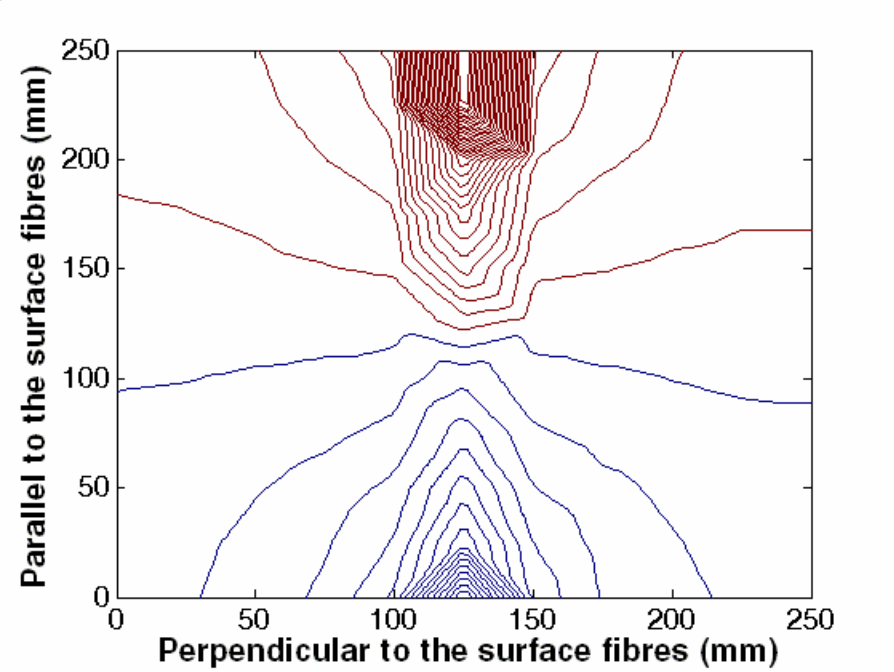

Figure A 5: Potential contour plot represented by 50 contour lines.

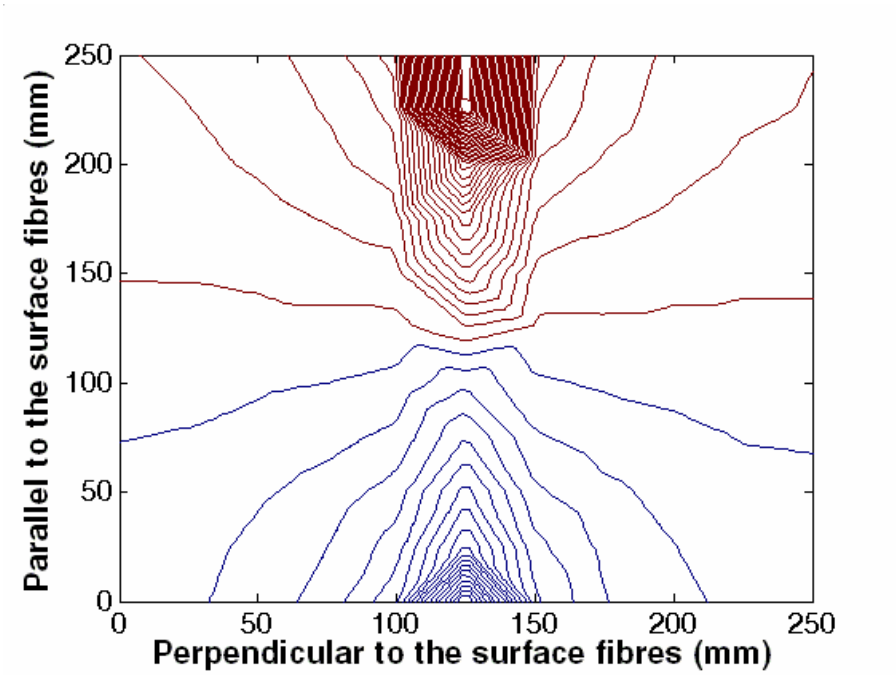

Figure A 6: Potential contour plot represented by 60 contour lines.

Matlab Programs (m-file):

2-D graphs program

```
close all
clear all
load potential.dat;
x=potential(:,1);
y=potential(:,2);
x1=linspace(min(x),max(x));
y1=linspace(min(y),max(y));
[xi,yi]=meshgrid(x1,y1);
z=potential(:,3);
zi=griddata(x,y,z,xi,yi);
[p1,p2]=contour(x1,y1,zi,30);
%[p1,p2]=contourf(x1,y1,zi,20);
%caxis([-6.8 9.14])
caxis([0.15 0.16])
xlabel('Perpendicular to the surface fibres (mm)')
ylabel('Parallel to the surface fibres (mm)')
zlabel ('Potential (mV)')
%%colorbar
%colormap
%%colormap cool
%%title ({'Contour model for potential distributions'})
clabel(p1,p2,'manual')
%%xlabel('x axis',16)
%colorbar
```

3-D graphs program

```
close all
clear all

load potential.dat;
x=potential(:,1);
y=potential(:,2);

x1=linspace(min(x),max(x));
y1=linspace(min(y),max(y));
%[xi,yi]=meshgrid(x1,y1);
[xi,yi]=meshgrid([0:10:300],[0:10:300]);
%[xi,yi]=meshgrid([200:15:700],[0:15:700]);
z=potential(:,3);
zi=griddata(x,y,z,xi,yi);
surf(xi,yi,zi)
caxis([-14 20])
%caxis([-0.0565 0.1144])
xlabel('Perpendicular to the surface fibres mm)')
ylabel('Parallel to the surface fibres (mm)')
zlabel('Relative Potential Change(%)')
```

Commands Description:

- The **linspace** function generates linearly spaced vectors. y = **linspace**(a,b) generates a row vector y of 100 points linearly spaced between and including a and b.
- [X,Y] = **meshgrid**(x,y) transforms the domain specified by vectors x and y into arrays X and Y, which can be used to evaluate functions of two variables and three-dimensional mesh/surface plots. The rows of the output array X are copies of the vector x; columns of the output array Y are copies of the vector y.
- ZI = **griddata**(x,y,z,XI,YI) fits a surface of the form z = f(x,y) to the data in the (usually) nonuniformly spaced vectors (x,y,z). griddata interpolates this surface at the points specified by (XI,YI) to produce ZI. The surface always passes through the data points. XI and YI usually form a uniform grid (as produced by meshgrid).
- **Contour** function displays isolines of matrix Z

B POTENTIAL MEASUREMENTS IN LAMINATE SAMPLES

The original values for the potential measurements on undamaged and damaged laminates are given in this appendix. These values were used in order to produce all the contour plots presented in this Thesis. In the following tables, each Electrical Potential value corresponds to a specific set of coordinates (x, y) which is also shown. The selected coordinate axis system for all laminates is shown in Figure B. 1.

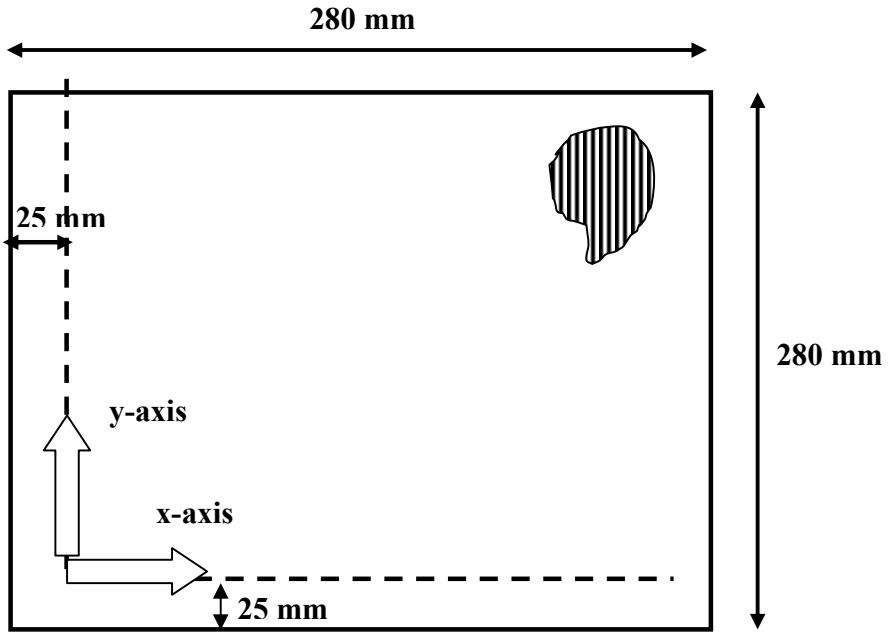

Figure B. 1: Coordinate system used for defining the position of the potential probes on the lamina.

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	-0.915	100	0	-3.362	200	0	-1.383
0	25	-0.848	100	25	-2.904	200	25	-1.171
0	50	-0.695	100	50	-2.05	200	50	-0.938
0	75	-0.508	100	75	-1.274	200	75	-0.683
0	100	-0.277	100	100	-0.618	200	100	-0.331
0	125	-0.016	100	125	0.087	200	125	0.038
0	150	0.246	100	150	0.788	200	150	0.391
0	175	0.486	100	175	1.572	200	175	0.717
0	200	0.694	100	200	2.324	200	200	1.068
0	225	0.839	100	225	3.405	200	225	1.234
0	250	0.922	100	250	3.945	200	250	1.506
25	0	-1.04	125	0	-51.924	225	0	-0.966
25	25	-0.944	125	25	-30.253	225	25	-0.839
25	50	-0.769	125	50	-17.664	225	50	-0.634
25	75	-0.534	125	75	-7.682	225	75	-0.441
25	100	-0.27	125	100	-3.267	225	100	-0.191
25	125	0.017	125	125	-0.306	225	125	0.057
25	150	0.283	125	150	2	225	150	0.281
25	175	0.574	125	175	3.535	225	175	0.515
25	200	0.805	125	200	14.388	225	200	0.71
25	225	0.997	125	225	22.137	225	225	0.875
25	250	1.109	125	250	34.183	225	250	0.969
50	0	-1.342	150	0	-3.4107	250	0	0.905
50	25	-1.242	150	25	-2.847	250	25	-0.737
50	50	-0.963	150	50	-2.089	250	50	-0.616
50	75	-0.689	150	75	-1.26	250	75	-0.454
50	100	-0.331	150	100	-0.619	250	100	-0.222
50	125	0.011	150	125	0.038	250	125	0.006
50	150	0.406	150	150	0.699	250	150	0.241
50	175	0.751	150	175	1.465	250	175	0.456
50	200	1.016	150	200	2.335	250	200	0.649
50	225	1.372	150	225	3.248	250	225	0.804
50	250	1.516	150	250	4.146	250	250	0.886
75	0	-1.965	175	0	-1.916			
75	25	-1.739	175	25	-1.66			
75	50	-1.341	175	50	-1.35			
75	75	-0.889	175	75	-0.87			
75	100	-0.421	175	100	-0.397			
75	125	0.049	175	125	0.096			
75	150	0.506	175	150	0.529			
75	175	1.021	175	175	1.014			
75	200	1.518	175	200	1.494			
75	225	2.059	175	225	1.841			
75	250	2.304	175	250	2.148			

Table B. 2: Electrical Potential data for CP1 plate, Figure 7. 1.

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP(V)	x (mm)	y (mm)	EP(V)
0	0	-0.892	100	0	-3.748	200	0	-1.345
0	25	-0.799	100	25	-2.843	200	25	-1.17
0	50	-0.66	100	50	-2.167	200	50	-0.951
0	75	-0.444	100	75	-1.337	200	75	-0.649
0	100	-0.23	100	100	-0.672	200	100	-0.272
0	125	0	100	125	0.0002	200	125	0.074
0	150	0.252	100	150	0.64	200	150	0.417
0	175	0.471	100	175	1.245	200	175	0.783
0	200	0.668	100	200	2.028	200	200	1.101
0	225	0.795	100	225	2.524	200	225	1.307
0	250	0.86	100	250	3.332	200	250	1.423
25	0	-1.02	125	0	-14.028	225	0	-0.943
25	25	-0.893	125	25	-6.72	225	25	-0.82
25	50	-0.781	125	50	-4.879	225	50	-0.668
25	75	-0.509	125	75	-3.228	225	75	-0.437
25	100	-0.267	125	100	-1.689	225	100	-0.197
25	125	0.009	125	125	0.816	225	125	0.08
25	150	0.264	125	150	4.218	225	150	0.338
25	175	0.526	125	175	6.858	225	175	0.62
25	200	0.73	125	200	11.278	225	200	0.811
25	225	0.892	125	225	27.389	225	225	0.998
25	250	1.016	125	250	28.234	225	250	1.053
50	0	-1.456	150	0	-3.325	250	0	-0.842
50	25	-1.329	150	25	-2.732	250	25	-0.719
50	50	-1.049	150	50	-1.953	250	50	-0.637
50	75	-0.695	150	75	-1.237	250	75	-0.395
50	100	-0.366	150	100	-0.548	250	100	-0.193
50	125	0.001	150	125	0.078	250	125	0.08
50	150	0.35	150	150	0.683	250	150	0.338
50	175	0.673	150	175	1.491	250	175	0.62
50	200	0.997	150	200	2.216	250	200	0.696
50	225	1.206	150	225	2.993	250	225	0.874
50	250	1.344	150	250	3.643	250	250	0.922
75	0	-2.122	175	0	-1.874			
75	25	-1.832	175	25	-1.661			
75	50	-1.41	175	50	-1.298			
75	75	-0.948	175	75	-0.829			
75	100	-0.464	175	100	-0.386			
75	125	0.001	175	125	0.098			
75	150	0.502	175	150	0.566			
75	175	0.949	175	175	1.033			
75	200	1.363	175	200	1.485			
75	225	1.655	175	225	1.894			
75	250	1.925	175	250	2.095			

Table B. 3: Electrical Potential data for CP 2 plate, Figure 7. 1.

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	1.398	100	0	0.294	200	0	-0.917
0	25	1.78	100	25	0.299	200	25	-1.094
0	50	2.56	100	50	0.368	200	50	-1.268
0	75	3.596	100	75	0.404	200	75	-1.437
0	100	4.581	100	100	0.431	200	100	-1.628
0	125	5.368	100	125	0.464	200	125	-1.737
0	150	4.869	100	150	0.437	200	150	-1.635
0	175	3.531	100	175	0.409	200	175	-1.475
0	200	2.465	100	200	0.393	200	200	-1.254
0	225	1.856	100	225	0.327	200	225	-1.17
0	250	1.489	100	250	0.324	200	250	-0.975
25	0	1.293	125	0	-0.038	225	0	-1.278
25	25	1.52	125	25	-0.032	225	25	-1.493
25	50	1.877	125	50	-0.014	225	50	-1.763
25	75	2.342	125	75	-0.019	225	75	-2.037
25	100	2.737	125	100	-0.017	225	100	-2.279
25	125	2.931	125	125	-0.008	225	125	-2.423
25	150	2.716	125	150	-0.041	225	150	-2.313
25	175	2.285	125	175	-0.062	225	175	-2.054
25	200	1.891	125	200	-0.019	225	200	-1.774
25	225	1.531	125	225	-0.037	225	225	-1.536
25	250	1.309	125	250	-0.047	225	250	-1.339
50	0	0.97	150	0	-0.345	250	0	-1.241
50	25	1.105	150	25	-0.365	250	25	-1.77
50	50	1.349	150	50	-0.404	250	50	-2.306
50	75	1.54	150	75	-0.489	250	75	-2.994
50	100	1.765	150	100	-0.498	250	100	-3.586
50	125	1.853	150	125	-0.502	250	125	-4.106
50	150	1.679	150	150	-0.504	250	150	-3.843
50	175	1.499	150	175	-0.476	250	175	-2.874
50	200	1.369	150	200	-0.423	250	200	-2.153
50	225	1.104	150	225	-0.399	250	225	-1.62
50	250	0.997	150	250	-0.348	250	250	-1.322
75	0	0.622	175	0	0.678			
75	25	0.709	175	25	-0.755			
75	50	0.8	175	50	-0.815			
75	75	0.942	175	75	-0.93			
75	100	1.043	175	100	-1.004			
75	125	1.084	175	125	-1.045			
75	150	1.063	175	150	-1.001			
75	175	0.903	175	175	-0.949			
75	200	0.816	175	200	-0.834			
75	225	0.699	175	225	-0.782			
75	250	0.644	175	250	-0.715			

Table B. 4: Electrical Potential data for CP plate, Figure 7. 3 (a).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	-0.695	100	0	-1.393	200	0	-4.034
0	25	-0.582	100	25	-1.274	200	25	-3.744
0	50	-0.421	100	50	-1.156	200	50	-3.297
0	75	-0.116	100	75	-0.941	200	75	-2.730
0	100	0.209	100	100	-0.748	200	100	-2.301
0	125	0.703	100	125	-0.495	200	125	-1.875
0	150	1.87	100	150	-0.257	200	150	-1.546
0	175	4.942	100	175	0.083	200	175	-1.243
0	200	7.037	100	200	0.265	200	200	-1.032
0	225	26.611	100	225	0.462	200	225	-0.913
0	250	Input	100	250	0.435	200	250	-0.817
25	0	-0.718	125	0	-1.787	225	0	-6.289
25	25	-0.585	125	25	-1.732	225	25	-5.445
25	50	-0.475	125	50	-1.56	225	50	-4.393
25	75	-0.198	125	75	-1.328	225	75	-3.567
25	100	0.097	125	100	-1.103	225	100	-2.902
25	125	0.531	125	125	-0.863	225	125	-2.320
25	150	1.043	125	150	-0.604	225	150	-1.874
25	175	1.696	125	175	-0.381	225	175	-1.497
25	200	2.453	125	200	-0.188	225	200	-1.277
25	225	3.296	125	225	-0.079	225	225	-1.083
25	250	3.756	125	250	0	225	250	-1.004
50	0	-0.908	150	0	-2.267	250	0	Output
50	25	-0.836	150	25	-2.201	250	25	-38.573
50	50	-0.677	150	50	-1.979	250	50	-11.24
50	75	-0.452	150	75	-1.705	250	75	-4.3
50	100	-0.17	150	100	-1.552	250	100	-3.56
50	125	0.164	150	125	-1.182	250	125	-3.372
50	150	0.519	150	150	-0.982	250	150	-2.801
50	175	1.037	150	175	-0.761	250	175	-1.734
50	200	1.451	150	200	-0.527	250	200	-1.576
50	225	1.973	150	225	-0.407	250	225	-1.154
50	250	2.036	150	250	-0.333	250	250	-1.059
75	0	-1.104	175	0	-3.132			
75	25	-1.020	175	25	-2.868			
75	50	-0.882	175	50	-2.566			
75	75	-0.694	175	75	-2.227			
75	100	-0.458	175	100	-1.869			
75	125	-0.167	175	125	-1.540			
75	150	0.171	175	150	-1.24			
75	175	0.460	175	175	-0.991			
75	200	0.804	175	200	-0.819			
75	225	0.996	175	225	-0.687			
75	250	1.138	175	250	-0.615			

Table B. 5: Electrical Potential data for CP plate, Figure 7. 3 (b).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	-0.543	100	0	-0.527	200	0	-0.478
0	25	-0.458	100	25	-0.437	200	25	-0.399
0	50	-0.372	100	50	-0.331	200	50	-0.315
0	75	-0.25	100	75	-0.218	200	75	-0.213
0	100	-0.13	100	100	-0.097	200	100	-0.09
0	125	0.009	100	125	0.027	200	125	0.024
0	150	0.133	100	150	0.157	200	150	0.143
0	175	0.264	100	175	0.29	200	175	0.263
0	200	0.379	100	200	0.419	200	200	0.379
0	225	0.473	100	225	0.528	200	225	0.453
0	250	0.539	100	250	0.62	200	250	0.536
25	0	-0.5	125	0	-0.498	225	0	-0.457
25	25	-0.476	125	25	-0.432	225	25	-0.378
25	50	-0.34	125	50	-0.334	225	50	-0.292
25	75	-0.224	125	75	-0.214	225	75	-0.193
25	100	-0.114	125	100	-0.099	225	100	-0.091
25	125	0.0011	125	125	0.035	225	125	0.023
25	150	0.113	125	150	0.166	225	150	0.132
25	175	0.257	125	175	0.296	225	175	0.253
25	200	0.366	125	200	0.415	225	200	0.342
25	225	0.462	125	225	0.521	225	225	0.430
25	250	0.545	125	250	0.645	225	250	0.48
50	0	-0.519	150	0	-0.498	250	0	-0.48
50	25	-0.448	150	25	-0.417	250	25	-0.392
50	50	-0.339	150	50	-0.324	250	50	-0.33
50	75	-0.229	150	75	-0.212	250	75	-0.22
50	100	-0.116	150	100	-0.09	250	100	-0.119
50	125	0.016	150	125	0.031	250	125	0.018
50	150	0.143	150	150	0.152	250	150	0.138
50	175	0.269	150	175	0.285	250	175	0.254
50	200	0.39	150	200	0.404	250	200	0.339
50	225	0.496	150	225	0.493	250	225	0.435
50	250	0.571	150	250	0.611	250	250	0.493
75	0	-0.524	175	0	-0.496			
75	25	-0.439	175	25	-0.413			
75	50	-0.338	175	50	-0.321			
75	75	-0.22	175	75	-0.213			
75	100	-0.104	175	100	-0.096			
75	125	0.022	175	125	0.032			
75	150	0.166	175	150	0.156			
75	175	0.289	175	175	0.278			
75	200	0.411	175	200	0.387			
75	225	0.516	175	225	0.488			
75	250	0.62	175	250	0.528			

Table B. 6: Electrical Potential data for CP plate, Figure 7. 5 (a).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	1.269	100	0	0.194	200	0	-0.463
0	25	0.946	100	25	0.076	200	25	-0.547
0	50	0.687	100	50	-0.022	200	50	-0.631
0	75	0.454	100	75	-0.157	200	75	-0.722
0	100	0.268	100	100	-0.284	200	100	-0.855
0	125	0.036	100	125	-0.419	200	125	-1.018
0	150	-0.145	100	150	-0.549	200	150	-1.17
0	175	-0.285	100	175	-0.663	200	175	-1.32
0	200	-0.4	100	200	-0.749	200	200	-1.465
0	225	-0.475	100	225	-0.85	200	225	-1.62
0	250	-0.527	100	250	-0.896	200	250	-1.711
25	0	0.918	125	0	-0.037	225	0	-0.611
25	25	0.72	125	25	-0.118	225	25	-0.679
25	50	0.517	125	50	-0.193	225	50	-0.784
25	75	0.324	125	75	-0.323	225	75	-0.888
25	100	0.141	125	100	-0.447	225	100	-1.028
25	125	-0.038	125	125	-0.568	225	125	-1.182
25	150	-0.18	125	150	-0.705	225	150	-1.316
25	175	-0.331	125	175	-0.837	225	175	-1.481
25	200	-0.431	125	200	-0.921	225	200	-1.633
25	225	-0.513	125	225	-1.014	225	225	-1.793
25	250	-0.565	125	250	-1.081	225	250	-1.885
50	0	0.686	150	0	-0.209	250	0	-0.601
50	25	0.539	150	25	-0.266	250	25	-0.7
50	50	0.364	150	50	-0.351	250	50	-0.796
50	75	0.191	150	75	-0.481	250	75	-0.896
50	100	0.026	150	100	-0.594	250	100	-1.061
50	125	-0.138	150	125	-0.72	250	125	-1.232
50	150	-0.3	150	150	-0.858	250	150	-1.418
50	175	-0.423	150	175	-1	250	175	-1.624
50	200	-0.502	150	200	-1.114	250	200	-1.834
50	225	-0.602	150	225	-1.214	250	225	-2.04
50	250	-0.647	150	250	-1.248	250	250	-2.225
75	0	0.449	175	0	-0.375			
75	25	0.319	175	25	-0.436			
75	50	0.178	175	50	-0.506			
75	75	0.034	175	75	-0.621			
75	100	-0.12	175	100	-0.751			
75	125	-0.271	175	125	-0.899			
75	150	-0.406	175	150	-1.021			
75	175	-0.543	175	175	-1.181			
75	200	-0.639	175	200	-1.287			
75	225	-0.728	175	225	-1.397			
75	250	-0.774	175	250	-1.48			

Table B. 7: Electrical Potential data for CP plate, Figure 7. 5 (b).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	0.635	100	0	0.16	200	0	-0.388
0	25	0.623	100	25	0.169	200	25	-0.382
0	50	0.625	100	50	0.151	200	50	-0.371
0	75	0.643	100	75	0.169	200	75	-0.37
0	100	0.644	100	100	0.158	200	100	-0.378
0	125	0.642	100	125	0.167	200	125	-0.379
0	150	0.64	100	150	0.159	200	150	-0.38
0	175	0.633	100	175	0.182	200	175	-0.373
0	200	0.612	100	200	0.161	200	200	-0.394
0	225	0.613	100	225	0.176	200	225	-0.395
0	250	0.623	100	250	0.149	200	250	-0.426
25	0	0.545	125	0	0.01	225	0	-0.5
25	25	0.541	125	25	0.007	225	25	-0.492
25	50	0.525	125	50	0.009	225	50	-0.473
25	75	0.537	125	75	0.012	225	75	-0.477
25	100	0.54	125	100	0.015	225	100	-0.468
25	125	0.545	125	125	0.013	225	125	-0.472
25	150	0.545	125	150	0.011	225	150	-0.473
25	175	0.534	125	175	0.016	225	175	-0.478
25	200	0.534	125	200	0.018	225	200	-0.488
25	225	0.536	125	225	0.009	225	225	-0.496
25	250	0.534	125	250	0	225	250	-0.524
50	0	0.424	150	0	-0.127	250	0	-0.555
50	25	0.416	150	25	-0.117	250	25	-0.545
50	50	0.407	150	50	-0.131	250	50	-0.542
50	75	0.423	150	75	-0.121	250	75	-0.552
50	100	0.429	150	100	-0.139	250	100	-0.543
50	125	0.425	150	125	-0.123	250	125	-0.523
50	150	0.42	150	150	-0.143	250	150	-0.547
50	175	0.428	150	175	-0.123	250	175	-0.552
50	200	0.413	150	200	-0.14	250	200	-0.566
50	225	0.428	150	225	-0.124	250	225	-0.57
50	250	0.423	150	250	-0.156	250	250	-0.601
75	0	0.3	175	0	-0.282			
75	25	0.296	175	25	-0.263			
75	50	0.296	175	50	-0.255			
75	75	0.289	175	75	-0.264			
75	100	0.297	175	100	-0.259			
75	125	0.301	175	125	-0.266			
75	150	0.3	175	150	-0.266			
75	175	0.292	175	175	-0.259			
75	200	0.298	175	200	-0.275			
75	225	0.306	175	225	-0.279			
75	250	0.307	175	250	-0.295			

Table B. 8: Electrical Potential data for CP plate, Figure 7. 5 (c).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	-0.435	100	0	-2.357	200	0	-0.309
0	25	-0.404	100	25	-2.04	200	25	-0.125
0	50	-0.349	100	50	-1.77	200	50	0.049
0	75	-0.264	100	75	-1.294	200	75	0.273
0	100	-0.149	100	100	-0.731	200	100	0.518
0	125	0	100	125	-0.178	200	125	0.734
0	150	0.161	100	150	0.519	200	150	0.946
0	175	0.321	100	175	1.082	200	175	1.072
0	200	0.472	100	200	1.662	200	200	1.199
0	225	0.59	100	225	2.137	200	225	1.21
0	250	0.7	100	250	2.62	200	250	1.234
25	0	-0.408	125	0	Output	225	0	-0.049
25	25	-0.368	125	25	-100	225	25	0.06
25	50	-0.314	125	50	-63.566	225	50	0.172
25	75	-0.232	125	75	-32.947	225	75	0.296
25	100	-0.137	125	100	-14.631	225	100	0.434
25	125	-0.01	125	125	2.223	225	125	0.552
25	150	0.136	125	150	14.758	225	150	0.704
25	175	0.277	125	175	24.87	225	175	0.807
25	200	0.421	125	200	43.264	225	200	0.907
25	225	0.540	125	225	82.612	225	225	0.962
25	250	0.636	125	250	input	225	250	1.003
50	0	-0.682	150	0	-2.161	250	0	-0.069
50	25	-0.611	150	25	-1.697	250	25	0.017
50	50	-0.554	150	50	-1.194	250	50	0.138
50	75	-0.449	150	75	-0.544	250	75	0.271
50	100	-0.277	150	100	0.08	250	100	0.439
50	125	-0.121	150	125	0.702	250	125	0.603
50	150	0.114	150	150	1.342	250	150	0.71
50	175	0.325	150	175	1.897	250	175	0.826
50	200	0.557	150	200	2.491	250	200	0.883
50	225	0.748	150	225	2.852	250	225	0.925
50	250	0.928	150	250	2.985	250	250	0.961
75	0	-1.174	175	0	-0.944			
75	25	-1.2	175	25	-0.591			
75	50	-1.099	175	50	-0.323			
75	75	-0.84	175	75	0.093			
75	100	-0.57	175	100	0.423			
75	125	-0.223	175	125	0.76			
75	150	0.157	175	150	1.107			
75	175	0.537	175	175	1.366			
75	200	0.882	175	200	1.574			
75	225	1.184	175	225	1.663			
75	250	1.469	175	250	1.698			

Table B. 9: Electrical Potential (EP) data for QI plate, Figure 7. 6 (a).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	-0.131	100	0	-0.179	200	0	-0.277
0	25	-0.109	100	25	-0.13	200	25	-0.329
0	50	-0.081	100	50	-0.102	200	50	0.171
0	75	-0.052	100	75	-0.075	200	75	0.074
0	100	-0.027	100	100	-0.045	200	100	-0.002
0	125	0	100	125	-0.02	200	125	-0.063
0	150	-0.042	100	150	0.005	200	150	0.066
0	175	0.032	100	175	0.029	200	175	0.001
0	200	0.052	100	200	0.053	200	200	-0.314
0	225	0.07	100	225	0.069	200	225	0.298
0	250	0.093	100	250	0.085	200	250	0.242
25	0	-0.102	125	0	-0.27	225	0	-0.13
25	25	-0.081	125	25	-0.305	225	25	-0.106
25	50	-0.059	125	50	0.213	225	50	-0.083
25	75	-0.037	125	75	0.01	225	75	-0.054
25	100	-0.015	125	100	-0.064	225	100	-0.022
25	125	0.004	125	125	-0.028	225	125	0.018
25	150	0.033	125	150	0.092	225	150	0.024
25	175	0.043	125	175	0.025	225	175	0.056
25	200	0.052	125	200	-0.285	225	200	0.078
25	225	0.072	125	225	0.238	225	225	0.083
25	250	0.083	125	250	0.189	225	250	0.102
50	0	-0.292	150	0	-0.15	250	0	-0.116
50	25	-0.342	150	25	-0.125	250	25	-0.088
50	50	0.203	150	50	-0.098	250	50	-0.054
50	75	0.092	150	75	-0.062	250	75	-0.025
50	100	0.028	150	100	-0.025	250	100	0.003
50	125	-0.009	150	125	0.001	250	125	0.031
50	150	0.041	150	150	0.022	250	150	0.048
50	175	-0.009	150	175	0.043	250	175	0.069
50	200	-0.232	150	200	0.072	250	200	0.084
50	225	0.239	150	225	0.09	250	225	0.099
50	250	0.188	150	250	0.102	250	250	0.116
75	0	-0.17	175	0	-0.141			
75	25	-0.144	175	25	-0.106			
75	50	-0.111	175	50	-0.074			
75	75	-0.075	175	75	-0.025			
75	100	-0.045	175	100	-0.003			
75	125	-0.016	175	125	0.023			
75	150	0.012	175	150	0.046			
75	175	0.035	175	175	0.068			
75	200	0.059	175	200	0.092			
75	225	0.077	175	225	0.111			
75	250	0.091	175	250	0.129			

Table B. 10: Electrical Potential data for QI plate, Figure 7. 6 (b).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	3.895	100	0	1.014	200	0	-0.694
0	25	5.807	100	25	1.025	200	25	-0.814
0	50	9.818	100	50	0.928	200	50	-0.917
0	75	18.436	100	75	0.94	200	75	-1.067
0	100	33.625	100	100	0.825	200	100	-1.219
0	125	Input	100	125	0.79	200	125	-1.372
0	150	54.745	100	150	0.695	200	150	-1.472
0	175	25.061	100	175	0.629	200	175	-1.537
0	200	14.054	100	200	0.554	200	200	-1.524
0	225	7.785	100	225	0.491	200	225	-1.545
0	250	4.693	100	250	0.43	200	250	-1.521
25	0	2.569	125	0	0.587	225	0	-1.331
25	25	2.633	125	25	0.537	225	25	-1.488
25	50	2.681	125	50	0.493	225	50	-1.647
25	75	2.756	125	75	0.418	225	75	-1.776
25	100	2.799	125	100	0.365	225	100	-1.89
25	125	2.75	125	125	0.305	225	125	-2.031
25	150	2.602	125	150	0.231	225	150	-2.088
25	175	2.414	125	175	0.159	225	175	-2.145
25	200	2.261	125	200	0.086	225	200	-2.082
25	225	2.107	125	225	0.042	225	225	-2.03
25	250	1.945	125	250	0	225	250	-1.922
50	0	1.976	150	0	0.18	250	0	-3.228
50	25	2.02	150	25	0.123	250	25	-4.914
50	50	2.003	150	50	0.065	250	50	-6.709
50	75	2.032	150	75	-0.017	250	75	-11.79
50	100	1.934	150	100	-0.08	250	100	-27.12
50	125	1.937	150	125	-0.146	250	125	Output
50	150	1.804	150	150	-0.223	250	150	-9.253
50	175	1.683	150	175	-0.286	250	175	-12.995
50	200	1.529	150	200	-0.338	250	200	-7.81
50	225	1.409	150	225	-0.385	250	225	-4.816
50	250	1.298	150	250	-0.43	250	250	-3.684
75	0	1.511	175	0	-0.191			
75	25	1.479	175	25	-0.3129			
75	50	1.457	175	50	-0.384			
75	75	1.441	175	75	-0.509			
75	100	1.38	175	100	-0.597			
75	125	1.305	175	125	-0.67			
75	150	1.196	175	150	-0.723			
75	175	1.082	175	175	-0.838			
75	200	0.996	175	200	-0.902			
75	225	0.901	175	225	-0.968			
75	250	0.826	175	250	-0.992			

Table B. 11: Electrical Potential data for QI plate, Figure 7. 6 (c).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	-0.914	100	0	-3.809	200	0	-1.378
0	25	-0.832	100	25	-2.911	200	25	-1.205
0	50	-0.691	100	50	-2.235	200	50	-0.984
0	75	-0.466	100	75	-1.408	200	75	-0.682
0	100	-0.243	100	100	-0.731	200	100	-0.297
0	125	-0.025	100	125	-0.017	200	125	0.071
0	150	0.255	100	150	0.688	200	150	0.431
0	175	0.481	100	175	1.318	200	175	0.81
0	200	0.683	100	200	2.109	200	200	1.131
0	225	0.812	100	225	2.575	200	225	1.341
0	250	0.883	100	250	3.405	200	250	1.460
25	0	-1.052	125	0	-14.73	225	0	-0.972
25	25	-0.923	125	25	-7.175	225	25	-0.846
25	50	-0.809	125	50	-5.225	225	50	-0.693
25	75	-0.532	125	75	-3.906	225	75	-0.454
25	100	-0.279	125	100	-3.295	225	100	-0.207
25	125	0.006	125	125	Hole	225	125	0.078
25	150	0.27	125	150	7.249	225	150	0.346
25	175	0.502	125	175	7.671	225	175	0.636
25	200	0.752	125	200	10.95	225	200	0.833
25	225	0.917	125	225	27.17	225	225	1.024
25	250	1.041	125	250	28.12	225	250	1.081
50	0	-1.496	150	0	-3.382	250	0	-0.857
50	25	-1.369	150	25	-2.801	250	25	-0.738
50	50	-1.081	150	50	-2.032	250	50	-0.654
50	75	-0.721	150	75	-1.32	250	75	-0.409
50	100	-0.376	150	100	-0.602	250	100	-0.198
50	125	-0.005	150	125	0.067	250	125	0.082
50	150	0.363	150	150	0.727	250	150	0.33
50	175	0.69	150	175	1.565	250	175	0.568
50	200	1.024	150	200	2.281	250	200	0.717
50	225	1.246	150	225	3.108	250	225	0.897
50	250	1.384	150	250	3.701	250	250	0.971
75	0	-2.169	175	0	-1.917			
75	25	-1.879	175	25	-1.707			
75	50	-1.454	175	50	-1.347			
75	75	-0.988	175	75	-0.88			
75	100	-0.493	175	100	-0.423			
75	125	0	175	125	0.086			
75	150	0.533	175	150	0.599			
75	175	0.986	175	175	1.115			
75	200	1.411	175	200	1.534			
75	225	1.722	175	225	1.945			
75	250	1.974	175	250	2.139			

Table B. 12: Electrical Potentialdata for CP plate, Figure 7. 7 (a).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	0.021	100	0	0.06	200	0	0.033
0	25	0.033	100	25	0.067	200	25	0.035
0	50	0.03	100	50	0.068	200	50	0.033
0	75	0.021	100	75	0.07	200	75	0.033
0	100	0.013	100	100	0.059	200	100	0.025
0	125	0.025	100	125	0.017	200	125	0.003
0	150	-0.003	100	150	-0.048	200	150	-0.014
0	175	-0.01	100	175	-0.073	200	175	-0.026
0	200	-0.015	100	200	-0.08	200	200	-0.030
0	225	-0.017	100	225	-0.051	200	225	-0.034
0	250	-0.023	100	250	-0.072	200	250	-0.037
25	0	0.032	125	0	0.702	225	0	0.029
25	25	0.029	125	25	0.455	225	25	0.026
25	50	0.027	125	50	0.346	225	50	0.025
25	75	0.023	125	75	0.678	225	75	0.017
25	100	0.012	125	100	1.605	225	100	0.01
25	125	0.003	125	125	0.816	225	125	0.001
25	150	-0.005	125	150	-3.03	225	150	-0.007
25	175	0.023	125	175	-0.813	225	175	-0.015
25	200	-0.022	125	200	0.328	225	200	-0.022
25	225	-0.024	125	225	0.219	225	225	-0.025
25	250	-0.025	125	250	0.114	225	250	-0.028
50	0	0.05	150	0	0.057	250	0	0.015
50	25	0.04	150	25	0.068	250	25	0.019
50	50	0.032	150	50	0.078	250	50	0.016
50	75	0.026	150	75	0.083	250	75	0.014
50	100	0.01	150	100	0.053	250	100	0.005
50	125	0.007	150	125	0.011	250	125	-0.001
50	150	-0.012	150	150	-0.043	250	150	0.008
50	175	-0.02	150	175	-0.073	250	175	0.051
50	200	-0.027	150	200	-0.064	250	200	-0.021
50	225	-0.039	150	225	-0.115	250	225	-0.023
50	250	-0.04	150	250	-0.057	250	250	-0.049
75	0	0.046	175	0	0.042			
75	25	0.047	175	25	0.045			
75	50	0.044	175	50	0.048			
75	75	0.04	175	75	0.051			
75	100	0.029	175	100	0.0375			
75	125	0.001	175	125	0.012			
75	150	-0.03	175	150	-0.032			
75	175	-0.037	175	175	-0.081			
75	200	-0.047	175	200	-0.049			
75	225	-0.067	175	225	-0.051			
75	250	-0.048	175	250	-0.044			

Table B. 13: Electrical Potential data for CP plate, Figure 7. 7 (b).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	-0.935	100	0	-3.872	200	0	-1.422
0	25	-0.850	100	25	-2.97	200	25	-1.246
0	50	-0.709	100	50	-2.298	200	50	-1.02
0	75	-0.483	100	75	-1.469	200	75	-0.712
0	100	-0.259	100	100	-0.775	200	100	-0.309
0	125	0.01	100	125	-0.023	200	125	-0.068
0	150	0.249	100	150	0.723	200	150	0.441
0	175	0.482	100	175	1.363	200	175	0.831
0	200	0.698	100	200	2.162	200	200	1.158
0	225	0.823	100	225	2.613	200	225	1.367
0	250	0.906	100	250	3.45	200	250	1.486
25	0	-1.091	125	0	-14.864	225	0	-1.006
25	25	-0.961	125	25	-7.3	225	25	-0.873
25	50	-0.844	125	50	-5.154	225	50	-0.718
25	75	-0.561	125	75	-4.176	225	75	-0.476
25	100	-0.3	125	100	-3.749	225	100	-0.218
25	125	-0.01	125	125	Hole	225	125	0.076
25	150	0.251	125	150	7.912	225	150	0.353
25	175	0.538	125	175	7.56	225	175	0.649
25	200	0.759	125	200	10.971	225	200	0.851
25	225	0.924	125	225	27.401	225	225	1.046
25	250	1.049	125	250	28.07	225	250	1.101
50	0	-1.534	150	0	-3.443	250	0	-0.896
50	25	-1.406	150	25	-2.867	250	25	-0.767
50	50	-1.12	150	50	-2.102	250	50	-0.683
50	75	-0.751	150	75	-1.393	250	75	-0.431
50	100	-0.409	150	100	-0.645	250	100	-0.216
50	125	-0.018	150	125	0.064	250	125	0.075
50	150	0.367	150	150	0.767	250	150	0.331
50	175	0.707	150	175	1.619	250	175	0.578
50	200	1.043	150	200	2.333	250	200	0.731
50	225	1.267	150	225	3.159	250	225	0.911
50	250	1.401	150	250	3.738	250	250	0.976
75	0	-2.218	175	0	-1.971			
75	25	-1.93	175	25	-1.759			
75	50	-1.498	175	50	-1.396			
75	75	-1.021	175	75	-0.922			
75	100	-0.517	175	100	-0.457			
75	125	-0.003	175	125	0.083			
75	150	0.55	175	150	0.62			
75	175	1.012	175	175	1.148			
75	200	1.445	175	200	1.569			
75	225	1.753	175	225	1.978			
75	250	2.003	175	250	2.172			

Table B. 14: Electrical Potential data for CP plate, Figure 7. 8 (a).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	0.043	100	0	0.123	200	0	0.077
0	25	0.051	100	25	0.126	200	25	0.076
0	50	0.048	100	50	0.131	200	50	0.069
0	75	0.039	100	75	0.131	200	75	0.063
0	100	0.028	100	100	0.102	200	100	0.037
0	125	-0.01	100	125	0.023	200	125	0.143
0	150	0.002	100	150	-0.083	200	150	-0.024
0	175	-0.011	100	175	-0.117	200	175	-0.047
0	200	-0.03	100	200	-0.133	200	200	-0.057
0	225	-0.028	100	225	-0.089	200	225	-0.059
0	250	-0.045	100	250	-0.118	200	250	-0.062
25	0	0.07	125	0	0.836	225	0	0.062
25	25	0.067	125	25	0.579	225	25	0.053
25	50	0.063	125	50	0.274	225	50	0.049
25	75	0.052	125	75	0.947	225	75	0.038
25	100	0.033	125	100	2.059	225	100	0.021
25	125	0.02	125	125	Hole	225	125	0.003
25	150	0.012	125	150	-3.693	225	150	-0.014
25	175	-0.012	125	175	-0.701	225	175	-0.028
25	200	-0.028	125	200	0.306	225	200	-0.04
25	225	-0.031	125	225	-0.012	225	225	-0.047
25	250	-0.033	125	250	0.164	225	250	-0.048
50	0	0.077	150	0	0.118	250	0	0.054
50	25	0.077	150	25	0.134	250	25	0.048
50	50	0.071	150	50	0.148	250	50	0.045
50	75	0.056	150	75	0.156	250	75	0.036
50	100	0.043	150	100	0.096	250	100	0.022
50	125	0.019	150	125	0.014	250	125	0.005
50	150	-0.016	150	150	-0.083	250	150	0.007
50	175	-0.034	150	175	-0.128	250	175	0.041
50	200	-0.046	150	200	-0.116	250	200	-0.034
50	225	-0.06	150	225	-0.165	250	225	-0.037
50	250	-0.056	150	250	-0.095	250	250	-0.054
75	0	0.096	175	0	0.096			
75	25	0.097	175	25	0.097			
75	50	0.088	175	50	0.097			
75	75	0.073	175	75	0.093			
75	100	0.052	175	100	0.071			
75	125	0.005	175	125	0.015			
75	150	-0.048	175	150	-0.054			
75	175	-0.062	175	175	-0.114			
75	200	-0.082	175	200	-0.084			
75	225	-0.097	175	225	-0.08			
75	250	-0.077	175	250	-0.077			

Table B. 15: Electrical Potential data for CP plate, Figure 7. 8 (b).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	-0.554	100	0	-0.568	200	0	-0.517
0	25	-0.477	100	25	-0.48	200	25	-0.44
0	50	-0.387	100	50	-0.372	200	50	-0.353
0	75	-0.259	100	75	-0.258	200	75	-0.249
0	100	-0.13	100	100	-0.125	200	100	-0.114
0	125	0.022	100	125	0.021	200	125	0.013
0	150	0.156	100	150	0.173	200	150	0.144
0	175	0.294	100	175	0.323	200	175	0.275
0	200	0.418	100	200	0.458	200	200	0.396
0	225	0.517	100	225	0.57	200	225	0.476
0	250	0.6	100	250	0.669	200	250	0.566
25	0	-0.524	125	0	-0.549	225	0	-0.491
25	25	-0.445	125	25	-0.487	225	25	-0.413
25	50	-0.361	125	50	-0.398	225	50	-0.328
25	75	-0.237	125	75	-0.31	225	75	-0.219
25	100	-0.117	125	100	-0.256	225	100	-0.108
25	125	0.018	125	125	Hole	225	125	0.018
25	150	0.147	125	150	0.371	225	150	0.135
25	175	0.282	125	175	0.407	225	175	0.265
25	200	0.395	125	200	0.494	225	200	0.362
25	225	0.499	125	225	0.586	225	225	0.455
25	250	0.587	125	250	0.717	225	250	0.512
50	0	-0.549	150	0	-0.541	250	0	-0.495
50	25	-0.477	150	25	-0.462	250	25	-0.42
50	50	-0.366	150	50	-0.368	250	50	-0.365
50	75	-0.25	150	75	-0.255	250	75	-0.241
50	100	-0.13	150	100	-0.118	250	100	-0.132
50	125	0.015	150	125	0.024	250	125	0.013
50	150	0.157	150	150	0.169	250	150	0.145
50	175	0.292	150	175	0.315	250	175	0.266
50	200	0.419	150	200	0.440	250	200	0.356
50	225	0.534	150	225	0.535	250	225	0.458
50	250	0.613	150	250	0.656	250	250	0.528
75	0	-0.563	175	0	-0.531			
75	25	-0.476	175	25	-0.436			
75	50	-0.374	175	50	-0.349			
75	75	-0.251	175	75	-0.243			
75	100	-0.121	175	100	-0.11			
75	125	0.021	175	125	0.02			
75	150	0.18	175	150	0.148			
75	175	0.313	175	175	0.279			
75	200	0.446	175	200	0.4			
75	225	0.559	175	225	0.479			
75	250	0.664	175	250	0.567			

Table B. 16: Electrical Potential data for CP plate, Figure 7. 9 (a).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	-0.02	100	0	-0.041	200	0	-0.038
0	25	-0.019	100	25	-0.043	200	25	-0.041
0	50	-0.015	100	50	-0.04	200	50	-0.038
0	75	-0.009	100	75	-0.039	200	75	-0.035
0	100	0	100	100	-0.027	200	100	-0.023
0	125	0.012	100	125	-0.006	200	125	-0.011
0	150	0.023	100	150	0.016	200	150	0
0	175	0.03	100	175	0.033	200	175	0.011
0	200	0.039	100	200	0.039	200	200	0.017
0	225	0.044	100	225	0.042	200	225	0.023
0	250	0.061	100	250	0.048	200	250	0.03
25	0	-0.024	125	0	-0.05	225	0	-0.034
25	25	0.031	125	25	-0.0547	225	25	-0.035
25	50	-0.021	125	50	-0.063	225	50	-0.035
25	75	-0.013	125	75	-0.096	225	75	-0.026
25	100	-0.002	125	100	-0.156	225	100	-0.017
25	125	0.0175	125	125	Hole	225	125	-0.005
25	150	0.033	125	150	0.205	225	150	0.003
25	175	0.025	125	175	0.11	225	175	0.012
25	200	0.029	125	200	0.078	225	200	0.019
25	225	0.037	125	225	0.064	225	225	0.025
25	250	0.042	125	250	0.071	225	250	0.031
50	0	-0.029	150	0	-0.043	250	0	-0.015
50	25	-0.029	150	25	-0.045	250	25	-0.027
50	50	-0.026	150	50	-0.044	250	50	-0.029
50	75	-0.02	150	75	-0.042	250	75	-0.021
50	100	-0.013	150	100	-0.028	250	100	-0.013
50	125	0	150	125	-0.006	250	125	-0.005
50	150	0.013	150	150	0.016	250	150	0.006
50	175	0.022	150	175	0.029	250	175	0.012
50	200	0.029	150	200	0.036	250	200	0.017
50	225	0.037	150	225	0.041	250	225	0.023
50	250	0.041	150	250	0.045	250	250	0.035
75	0	-0.039	175	0	-0.034			
75	25	-0.037	175	25	-0.023			
75	50	-0.036	175	50	-0.027			
75	75	-0.031	175	75	-0.03			
75	100	-0.017	175	100	-0.01			
75	125	-0.001	175	125	-0.012			
75	150	0.014	175	150	-0.008			
75	175	0.024	175	175	0.001			
75	200	0.035	175	200	0.012			
75	225	0.042	175	225	-0.009			
75	250	0.044	175	250	0.039			

Table B. 17: Electrical Potential data for CP plate, Figure 7. 9 (b).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	-0.615	100	0	-0.64	200	0	-0.563
0	25	-0.525	100	25	-0.547	200	25	-0.478
0	50	-0.426	100	50	-0.45	200	50	-0.384
0	75	-0.286	100	75	-0.318	200	75	-0.263
0	100	-0.143	100	100	-0.203	200	100	-0.118
0	125	0.023	100	125	0.034	200	125	0.038
0	150	0.172	100	150	0.267	200	150	0.184
0	175	0.324	100	175	0.391	200	175	0.331
0	200	0.423	100	200	0.54	200	200	0.464
0	225	0.568	100	225	0.652	200	225	0.55
0	250	0.655	100	250	0.758	200	250	0.643
25	0	-0.577	125	0	-0.622	225	0	-0.531
25	25	-0.493	125	25	-0.560	225	25	-0.443
25	50	-0.4	125	50	-0.479	225	50	-0.347
25	75	-0.253	125	75	-0.408	225	75	-0.226
25	100	-0.118	125	100	-0.38	225	100	-0.102
25	125	0.025	125	125	Hole	225	125	0.039
25	150	0.164	125	150	0.506	225	150	0.172
25	175	0.314	125	175	0.526	225	175	0.316
25	200	0.439	125	200	0.597	225	200	0.421
25	225	0.549	125	225	0.683	225	225	0.524
25	250	0.645	125	250	0.793	225	250	0.586
50	0	-0.611	150	0	-0.607	250	0	-0.553
50	25	-0.535	150	25	-0.522	250	25	-0.449
50	50	-0.412	150	50	-0.422	250	50	-0.391
50	75	-0.283	150	75	-0.303	250	75	-0.248
50	100	-0.146	150	100	-0.134	250	100	0.126
50	125	0.019	150	125	0.041	250	125	0.038
50	150	0.183	150	150	0.222	250	150	0.182
50	175	0.334	150	175	0.397	250	175	0.319
50	200	0.472	150	200	0.524	250	200	0.426
50	225	0.596	150	225	0.631	250	225	0.527
50	250	0.68	150	250	0.744	250	250	0.598
75	0	-0.627	175	0	-0.587			
75	25	-0.535	175	25	-0.499			
75	50	-0.425	175	50	-0.4			
75	75	-0.290	175	75	-0.273			
75	100	-0.142	175	100	-0.131			
75	125	0.029	175	125	0.045			
75	150	0.218	175	150	0.216			
75	175	0.367	175	175	0.371			
75	200	0.512	175	200	0.491			
75	225	0.631	175	225	0.599			
75	250	0.741	175	250	0.679			

Table B. 18: Electrical Potential data for CP plate, Figure 7. 10 (a).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	-0.071	100	0	-0.112	200	0	-0.084
0	25	-0.067	100	25	-0.109	200	25	-0.079
0	50	-0.054	100	50	-0.119	200	50	-0.069
0	75	-0.036	100	75	-0.099	200	75	-0.049
0	100	-0.013	100	100	-0.106	200	100	-0.027
0	125	0.013	100	125	0.006	200	125	0.014
0	150	0.039	100	150	0.11	200	150	0.04
0	175	0.06	100	175	0.101	200	175	0.067
0	200	0.044	100	200	0.121	200	200	0.085
0	225	0.095	100	225	0.123	200	225	0.097
0	250	0.116	100	250	0.137	200	250	0.107
25	0	-0.077	125	0	-0.123	225	0	-0.074
25	25	-0.016	125	25	-0.128	225	25	-0.065
25	50	-0.059	125	50	-0.144	225	50	-0.055
25	75	-0.029	125	75	-0.19	225	75	-0.032
25	100	-0.004	125	100	-0.281	225	100	-0.011
25	125	0.024	125	125	Hole	225	125	0.015
25	150	0.051	125	150	0.339	225	150	0.039
25	175	0.057	125	175	0.229	225	175	0.063
25	200	0.073	125	200	0.182	225	200	0.078
25	225	0.087	125	225	0.161	225	225	0.094
25	250	0.1	125	250	0.147	225	250	0.105
50	0	-0.091	150	0	-0.109	250	0	-0.072
50	25	-0.087	150	25	-0.104	250	25	-0.056
50	50	-0.073	150	50	-0.098	250	50	-0.055
50	75	-0.053	150	75	-0.091	250	75	-0.028
50	100	-0.029	150	100	-0.044	250	100	0.246
50	125	0.003	150	125	0.01	250	125	0.019
50	150	0.039	150	150	0.07	250	150	0.044
50	175	0.064	150	175	0.112	250	175	0.065
50	200	0.082	150	200	0.119	250	200	0.087
50	225	0.1	150	225	0.137	250	225	0.092
50	250	0.108	150	250	0.133	250	250	0.105
75	0	-0.103	175	0	-0.09			
75	25	-0.095	175	25	-0.08			
75	50	-0.087	175	50	-0.078			
75	75	-0.07	175	75	-0.06			
75	100	-0.037	175	100	-0.034			
75	125	0.007	175	125	0.013			
75	150	0.051	175	150	0.060			
75	175	0.078	175	175	0.093			
75	200	0.101	175	200	0.104			
75	225	0.115	175	225	0.110			
75	250	0.12	175	250	0.15			

Table B. 19: Electrical Potential data for CP plate, Figure 7. 10 (b).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	0.643	100	0	0.151	200	0	-0.402
0	25	0.624	100	25	0.17	200	25	-0.396
0	50	0.633	100	50	0.153	200	50	-0.386
0	75	0.652	100	75	0.172	200	75	-0.38
0	100	0.656	100	100	0.166	200	100	-0.391
0	125	0.656	100	125	0.177	200	125	-0.389
0	150	0.653	100	150	0.167	200	150	-0.392
0	175	0.642	100	175	0.188	200	175	-0.385
0	200	0.624	100	200	0.162	200	200	-0.403
0	225	0.622	100	225	0.178	200	225	-0.4
0	250	0.633	100	250	0.148	200	250	-0.431
25	0	0.552	125	0	0	225	0	-0.513
25	25	0.55	125	25	-0.001	225	25	-0.502
25	50	0.532	125	50	0.003	225	50	-0.494
25	75	0.545	125	75	0.009	225	75	-0.489
25	100	0.548	125	100	0.009	225	100	-0.48
25	125	0.552	125	125	Hole	225	125	-0.484
25	150	0.551	125	150	0.016	225	150	-0.489
25	175	0.538	125	175	0.016	225	175	-0.491
25	200	0.537	125	200	0.014	225	200	-0.5
25	225	0.543	125	225	0.006	225	225	-0.509
25	250	0.538	125	250	0	225	250	-0.533
50	0	0.421	150	0	-0.14	250	0	-0.572
50	25	0.414	150	25	-0.132	250	25	-0.557
50	50	0.408	150	50	-0.14	250	50	-0.556
50	75	0.427	150	75	-0.134	250	75	-0.565
50	100	0.434	150	100	-0.156	250	100	-0.56
50	125	0.431	150	125	-0.144	250	125	-0.542
50	150	0.426	150	150	-0.16	250	150	-0.56
50	175	0.432	150	175	-0.132	250	175	-0.565
50	200	0.427	150	200	-0.148	250	200	-0.577
50	225	0.435	150	225	-0.181	250	225	-0.581
50	250	0.427	150	250	-0.157	250	250	-0.56
75	0	0.298	175	0	-0.303			
75	25	0.294	175	25	-0.281			
75	50	0.295	175	50	-0.272			
75	75	0.29	175	75	-0.277			
75	100	0.301	175	100	-0.28			
75	125	0.308	175	125	-0.285			
75	150	0.306	175	150	-0.277			
75	175	0.297	175	175	-0.269			
75	200	0.306	175	200	-0.285			
75	225	0.30	175	225	-0.288			
75	250	0.304	175	250	-0.301			

Table B. 20: Electrical Potential data for CP plate, Figure 7. 12 (a).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	-0.008	100	0	0.009	200	0	0.014
0	25	0	100	25	-0.001	200	25	0.0148
0	50	-0.008	100	50	-0.0015	200	50	0.014
0	75	-0.009	100	75	-0.003	200	75	0.01
0	100	-0.012	100	100	-0.007	200	100	0.013
0	125	-0.014	100	125	-0.01	200	125	0.010
0	150	-0.013	100	150	-0.008	200	150	0.012
0	175	-0.009	100	175	-0.006	200	175	0.012
0	200	-0.011	100	200	-0.001	200	200	0.008
0	225	-0.008	100	225	-0.002	200	225	0.005
0	250	-0.01	100	250	0	200	250	0.005
25	0	-0.006	125	0	0.009	225	0	0.013
25	25	-0.009	125	25	0.008	225	25	0.010
25	50	-0.007	125	50	0.005	225	50	0.020
25	75	-0.007	125	75	0.003	225	75	0.012
25	100	-0.007	125	100	0.005	225	100	0.012
25	125	-0.007	125	125	Hole	225	125	0.01
25	150	-0.006	125	150	-0.004	225	150	0.015
25	175	-0.003	125	175	0	225	175	0.013
25	200	-0.002	125	200	0.004	225	200	0.012
25	225	-0.006	125	225	0.002	225	225	0.013
25	250	-0.003	125	250	0	225	250	0.009
50	0	0.002	150	0	0.012	250	0	0.017
50	25	0.001	150	25	0.014	250	25	0.012
50	50	-0	150	50	0.009	250	50	0.013
50	75	-0.004	150	75	0.012	250	75	0.013
50	100	-0.005	150	100	0.017	250	100	0.016
50	125	-0.006	150	125	0.021	250	125	0.018
50	150	-0.006	150	150	0.017	250	150	0.012
50	175	-0.004	150	175	0.008	250	175	0.012
50	200	-0.014	150	200	0.008	250	200	0.01
50	225	-0.007	150	225	0.056	250	225	0.011
50	250	-0.004	150	250	0.001	250	250	-0.041
75	0	0.002	175	0	0.021			
75	25	0.002	175	25	0.017			
75	50	0.001	175	50	0.017			
75	75	-0.001	175	75	0.013			
75	100	-0.003	175	100	0.021			
75	125	-0.007	175	125	0.019			
75	150	-0.006	175	150	0.011			
75	175	-0.005	175	175	0.01			
75	200	-0.008	175	200	0.09			
75	225	-0.002	175	225	0.008			
75	250	0.002	175	250	0.006			

Table B. 21: Electrical Potential data for CP plate, Figure 7. 12 (b).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	0.661	100	0	0.169	200	0	-0.405
0	25	0.65	100	25	0.181	200	25	-0.399
0	50	0.659	100	50	0.172	200	50	-0.392
0	75	0.682	100	75	0.193	200	75	-0.388
0	100	0.69	100	100	0.195	200	100	-0.402
0	125	0.691	100	125	0.214	200	125	-0.4
0	150	0.684	100	150	0.195	200	150	-0.402
0	175	0.671	100	175	0.209	200	175	-0.393
0	200	0.65	100	200	0.18	200	200	-0.409
0	225	0.648	100	225	0.196	200	225	-0.405
0	250	0.653	100	250	0.162	200	250	-0.436
25	0	0.567	125	0	0.008	225	0	-0.519
25	25	0.568	125	25	0.006	225	25	-0.509
25	50	0.553	125	50	0.008	225	50	-0.497
25	75	0.57	125	75	0.013	225	75	-0.496
25	100	0.574	125	100	0.017	225	100	-0.495
25	125	0.58	125	125	Hole	225	125	-0.498
25	150	0.578	125	150	0.017	225	150	-0.498
25	175	0.566	125	175	0.022	225	175	-0.5
25	200	0.564	125	200	0.01	225	200	-0.508
25	225	0.562	125	225	0.014	225	225	-0.514
25	250	0.557	125	250	0	225	250	-0.535
50	0	0.44	150	0	-0.137	250	0	-0.574
50	25	0.436	150	25	-0.13	250	25	-0.562
50	50	0.432	150	50	-0.14	250	50	-0.563
50	75	0.452	150	75	-0.141	250	75	-0.574
50	100	0.46	150	100	-0.169	250	100	-0.57
50	125	0.458	150	125	-0.164	250	125	-0.552
50	150	0.452	150	150	-0.172	250	150	-0.552
50	175	0.454	150	175	-0.136	250	175	-0.574
50	200	0.443	150	200	-0.149	250	200	-0.585
50	225	0.45	150	225	-0.131	250	225	-0.587
50	250	0.444	150	250	-0.155	250	250	-0.613
75	0	0.317	175	0	-0.302			
75	25	0.314	175	25	-0.283			
75	50	0.317	175	50	-0.277			
75	75	0.315	175	75	-0.286			
75	100	0.33	175	100	-0.2881			
75	125	0.34	175	125	-0.299			
75	150	0.333	175	150	-0.29			
75	175	0.322	175	175	-0.276			
75	200	0.324	175	200	-0.291			
75	225	0.327	175	225	-0.295			
75	250	0.322	175	250	-0.305			

Table B. 22: Electrical Potential data for CP plate, Figure 7. 13 (a).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	0.018	100	0	0.017	200	0	-0.002
0	25	0.026	100	25	0.011	200	25	-0.002
0	50	0.026	100	50	0.018	200	50	-0.006
0	75	0.029	100	75	0.021	200	75	-0.007
0	100	0.034	100	100	0.029	200	100	-0.011
0	125	0.034	100	125	0.036	200	125	-0.011
0	150	0.031	100	150	0.028	200	150	-0.009
0	175	0.028	100	175	0.021	200	175	-0.008
0	200	0.026	100	200	0.018	200	200	-0.006
0	225	0.026	100	225	0.017	200	225	-0.004
0	250	0.02	100	250	0.013	200	250	-0.005
25	0	0.015	125	0	0.007	225	0	-0.0051
25	25	0.018	125	25	0.008	225	25	-0.006
25	50	0.02	125	50	0.005	225	50	-0.002
25	75	0.025	125	75	0.003	225	75	-0.007
25	100	0.026	125	100	0.007	225	100	-0.014
25	125	0.029	125	125	Hole	225	125	-0.014
25	150	0.027	125	150	0.001	225	150	-0.008
25	175	0.028	125	175	0.006	225	175	-0.009
25	200	0.026	125	200	-0.003	225	200	-0.008
25	225	0.02	125	225	0.007	225	225	-0.005
25	250	0.019	125	250	0	225	250	-0.002
50	0	0.019	150	0	0.002	250	0	-0.002
50	25	0.021	150	25	0.001	250	25	-0.005
50	50	0.024	150	50	0	250	50	-0.007
50	75	0.024	150	75	-0.005	250	75	-0.009
50	100	0.025	150	100	-0.012	250	100	-0.01
50	125	0.02	150	125	-0.02	250	125	-0.01
50	150	0.025	150	150	-0.012	250	150	0.008
50	175	0.021	150	175	-0.004	250	175	-0.009
50	200	0.016	150	200	-0.001	250	200	-0.007
50	225	0.015	150	225	0.050	250	225	-0.006
50	250	0.017	150	250	0.002	250	250	-0.052
75	0	0.019	175	0	0.001			
75	25	0.02	175	25	-0.002			
75	50	0.022	175	50	-0.004			
75	75	0.025	175	75	-0.008			
75	100	0.029	175	100	-0.007			
75	125	0.031	175	125	-0.013			
75	150	0.026	175	150	-0.012			
75	175	0.024	175	175	-0.006			
75	200	0.017	175	200	-0.005			
75	225	0.019	175	225	-0.006			
75	250	0.017	175	250	-0.004			

Table B. 23: Electrical Potential data for CP plate, Figure 7. 13 (b).

x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)	x (mm)	y (mm)	EP (V)
0	0	0.545	100	0	0.648	200	0	0.544
0	25	0.468	100	25	0.534	200	25	0.456
0	50	0.378	100	50	0.411	200	50	0.353
0	75	0.255	100	75	0.28	200	75	0.248
0	100	0.14	100	100	0.163	200	100	0.116
0	125	0	100	125	-0.002	200	125	-0.02
0	150	-0.144	100	150	-0.131	200	150	-0.141
0	175	-0.258	100	175	-0.241	200	175	-0.236
0	200	-0.367	100	200	-0.335	200	200	-0.349
0	225	-0.445	100	225	-0.432	200	225	-0.425
0	250	-0.508	100	250	-0.495	200	250	-0.496
25	0	0.527	125	0	0.634	225	0	0.5
25	25	0.448	125	25	0.52	225	25	0.421
25	50	0.351	125	50	0.422	225	50	0.316
25	75	0.237	125	75	0.301	225	75	0.218
25	100	0.117	125	100	0.202	225	100	0.096
25	125	-0.008	125	125	-0.153	225	125	-0.025
25	150	-0.126	125	150	-0.16	225	150	-0.131
25	175	-0.246	125	175	-0.253	225	175	-0.239
25	200	-0.341	125	200	-0.353	225	200	-0.331
25	225	-0.416	125	225	-0.428	225	225	-0.421
25	250	-0.486	125	250	-0.431	250	0	0.544
50	0	0.566	150	0	0.624	250	50	0.343
50	25	0.482	150	25	0.515	250	75	0.234
50	50	0.369	150	50	0.4	250	100	0.101
50	75	0.256	150	75	0.27	250	125	-0.028
50	100	0.126	150	100	0.138	250	150	-0.166
50	125	-0.004	150	125	0.003	250	175	-0.293
50	150	-0.142	150	150	-0.125	250	200	-0.387
50	175	-0.248	150	175	-0.253	250	225	-0.49
50	200	-0.341	150	200	-0.355	250	250	-0.557
50	225	-0.435	150	225	-0.422			
50	250	-0.497	150	250	-0.459			
75	0	0.611	175	0	0.586			
75	25	0.506	175	25	0.478			
75	50	0.389	175	50	0.376			
75	75	0.27	175	75	0.247			
75	100	0.134	175	100	0.114			
75	125	-0.008	175	125	-0.019			
75	150	-0.139	175	150	-0.137			
75	175	-0.256	175	175	-0.259			
75	200	-0.355	175	200	-0.345			
75	225	-0.449	175	225	-0.425			
75	250	-0.514	175	250	-0.487			

Table B. 24: Electrical Potential data for CP plate, Figure 7. 15.

x (mm)	y (mm)	EP (mV)	x (mm)	y (mm)	EP (mV)
90	115	25.5	165	40	24.66
90	140	25.8	165	65	25.1
90	165	26.2	165	90	25.7
115	40	24.2	165	115	26.4
115	65	24.4	165	140	27
115	90	24.9	165	165	27.7
115	115	25.4	165	190	28.3
115	140	26	165	215	28.73
115	165	26.6	165	240	29
115	190	26.8	190	115	26.7
115	215	27.9	190	140	27
115	240	28.4	190	165	27.3
140	40	-213.3			
140	65	-126.5			
140	90	-70.7			
140	115	-25			
140	140	Impact			
140	165	44			
140	190	80.9			
140	215	123.8			
140	240	200.2			

Table B. 25: Electrical Potential data for QI 1 plate, before 2 J impact; configuration 1.

x (mm)	y (mm)	EP (mV)	x (mm)	y (mm)	EP (mV)
90	115	25.5	165	40	24.6
90	140	25.8	165	65	25.1
90	165	26.2	165	90	25.7
115	40	24.2	165	115	26.4
115	65	24.4	165	140	27
115	90	24.9	165	165	27.7
115	115	25.4	165	190	28.3
115	140	26	165	215	28.7
115	165	26.6	165	240	29
115	190	26.9	190	115	26.7
115	215	27.9	190	140	27
115	240	28.4	190	165	27.3
140	40	-212.6			
140	65	-125.7			
140	90	-69.7			
140	115	-24.4			
140	140	Impact			
140	165	43.9			
140	190	80.6			
140	215	123.7			
140	240	200.1			

Table B. 26: Electrical Potential data for QI 1 plate, after 2 J impact; configuration 1.

x (mm)	y (mm)	EP (mV)	x (mm)	y (mm)	EP (mV)
90	115	27.8	165	40	24.2
90	140	28.2	165	65	24.6
90	165	28.7	165	90	25.1
115	40	25.3	165	115	25.8
115	65	25.9	165	140	26.6
115	90	26.6	165	165	27.4
115	115	27.4	165	190	28.2
115	140	28.2	165	215	29
115	165	28.8	165	240	29.6
115	190	28.8	190	115	26.3
115	215	30	190	140	26.6
115	240	30.4	190	165	27
140	40	-94.3			
140	65	-27.6			
140	90	-4.5			
140	115	11.7			
140	140	Impact			
140	165	35.9			
140	190	44.4			
140	215	51			
140	240	84.1			

Table B. 27: Electrical Potential data for QI 2 plate, before 4 J impact; configuration 1.

x (mm)	y (mm)	EP (mV)	x (mm)	y (mm)	EP (mV)
90	115	27.8	165	40	24.1
90	140	28.2	165	65	24.5
90	165	28.6	165	90	25
115	40	25.2	165	115	25.7
115	65	25.8	165	140	26.6
115	90	26.6	165	165	27.4
115	115	27.4	165	190	28.2
115	140	28.1	165	215	28.9
115	165	28.8	165	240	29.6
115	190	28.7	190	115	26.2
115	215	30	190	140	26.6
115	240	30.4	190	165	27
140	40	-93.9			
140	65	-27.6			
140	90	-4.5			
140	115	11.6			
140	140	Impact			
140	165	34.4			
140	190	43.6			
140	215	50.7			
140	240	84.4			

Table B. 28: Electrical Potential data for QI 2 plate, after 4 J impact; configuration 1.

x (mm)	y (mm)	EP (mV)	x (mm)	y (mm)	EP (mV)
90	115	27.6	165	40	24.6
90	140	28	165	65	24.9
90	165	28.5	165	90	25.3
115	40	24.9	165	115	25.9
115	65	25.5	165	140	26.6
115	90	26.3	165	165	27.3
115	115	27.1	165	190	28
115	140	27.9	165	215	28.6
115	165	28.6	165	240	28.9
115	190	28.4	190	115	26.2
115	215	29.9	190	140	26.5
115	240	30.4	190	165	26.9
140	40	-108.9			
140	65	-29.3			
140	90	-1.1			
140	115	14.9			
140	140	Impact			
140	165	36.5			
140	190	47.8			
140	215	73.5			
140	240	113.9			

Table B. 29: Electrical Potential data for QI 3 plate, before 6 J impact; configuration 1.

x (mm)	y (mm)	EP (mV)	x (mm)	y (mm)	EP (mV)
90	115	27.5	165	40	24.4
90	140	27.9	165	65	24.7
90	165	28.4	165	90	25.1
115	40	24.7	165	115	25.7
115	65	25.5	165	140	26.4
115	90	26.1	165	165	27.1
115	115	26.9	165	190	27.8
115	140	27.8	165	215	28.4
115	165	28.7	165	240	28.8
115	190	29.3	190	115	26
115	215	29.9	190	140	26.3
115	240	30.4	190	165	26.7
140	40	-108.9			
140	65	-29.6			
140	90	-1.2			
140	115	13.8			
140	140	Impact			
140	165	37.4			
140	190	48.2			
140	215	74.1			
140	240	114.1			

Table B. 30: Electrical Potential data for QI 3 plate after 6 J impact; configuration 1.

x (mm)	y (mm)	EP (mV)
90	115	25.9
90	140	26.3
90	165	26.7
115	40	24
115	65	24.5
115	90	25.1
115	115	25.6
115	140	26.2
115	165	26.7
115	190	27.2
115	215	27.9
115	240	28.4
140	40	-76.4
140	65	-22.7
140	90	1.9
140	115	16.5
140	140	Impact
140	165	28.9
140	190	36.6
140	215	47
140	240	79.5
165	40	23.6
165	65	24.4
165	90	24.8
165	115	25.6
165	140	26.2
165	165	26.8
165	190	27.4
165	215	28
165	240	28.5
190	115	25.9
190	140	26.3
190	165	26.7

Table B. 31: Electrical Potential data for QI 4 plate, before 8 J impact; configuration 1.

x (mm)	y (mm)	EP (mV)
90	115	25.9
90	140	26.4
90	165	26.8
115	40	24
115	65	24.5
115	90	25.1
115	115	25.6
115	140	26.2
115	165	26.8
115	190	27.2
115	215	27.9
115	240	28.4
140	40	-76.5
140	65	-23.2
140	90	1.3
140	115	15.1
140	140	Impact
140	165	30.3
140	190	37.4
140	215	47.2
140	240	79.6
165	40	23.6
165	65	24.4
165	90	24.8
165	115	25.6
165	140	26.2
165	165	26.8
165	190	27.4
165	215	28
165	240	28.6
190	115	25.9
190	140	26.4
190	165	26.8

Table B. 32: Electrical Potential data for QI 4 plate, after 8 J impact; configuration 1.

x (mm)	y (mm)	EP (mV)	x (mm)	y (mm)	EP (mV)
90	115	25.6	165	40	23.1
90	140	25.97	165	65	23.3
90	165	26.3	165	90	23.7
115	40	23.6	165	115	24.2
115	65	24	165	140	24.7
115	90	24.6	165	165	25.3
115	115	25.2	165	190	25.9
115	140	25.7	165	215	26.5
115	165	26.3	165	240	26.9
115	190	26.2	190	115	24.5
115	215	27.3	190	140	24.7
115	240	27.7	190	165	25
140	40	-180.4			
140	65	-94			
140	90	-8.8			
140	115	45.1			
140	140	Impact			
140	165	46.7			
140	190	76.3			
140	215	111.6			
140	240	140			

Table B. 33: Electrical Potential data for QI 5 plate, before 10 J impact; configuration 1.

x (mm)	y (mm)	EP (mV)	x (mm)	y (mm)	EP (mV)
90	115	24	165	40	21.3
90	140	24.4	165	65	21.6
90	165	24.7	165	90	22
115	40	21.8	165	115	22.5
115	65	22.3	165	140	23
115	90	22.9	165	165	23.7
115	115	23.6	165	190	24.4
115	140	24.1	165	215	25
115	165	24.7	165	240	25.4
115	190	24.7	190	115	22.8
115	215	25.8	190	140	23
115	240	26.3	190	165	23.3
140	40	-184.9			
140	65	-101.2			
140	90	-12.1			
140	115	61.9			
140	140	Impact			
140	165	57			
140	190	87.7			
140	215	120			
140	240	145.1			

Table B. 34: Electrical Potential data for QI 5 plate, after 10 J impact; configuration 1.

x (mm)	y (mm)	EP(mV)
90	115	25.3
90	140	25.3
90	165	26
115	40	22.7
115	65	23.4
115	90	24.2
115	115	24.8
115	140	25.5
115	165	26.1
115	190	25.9
115	215	27.1
115	240	27.6
140	40	-65.4
140	65	-15.9
140	90	7
140	115	18.6
140	140	Impact
140	165	40
140	190	59.4
140	215	91.6
140	240	22
165	40	22.4
165	65	23
165	90	23.7
165	115	24.5
165	140	25.3
165	165	26
165	190	26.9
165	215	27.2

Table B. 35: Electrical Potential data for QI 6 plate, before 12 J impact; configuration 1.

x (mm)	y (mm)	EP (mV)
90	115	25.3
90	140	25.7
90	165	26.1
115	40	22.6
115	65	23.3
115	90	24.1
115	115	24.8
115	140	25.5
115	165	26.1
115	190	25.9
115	215	27.2
115	240	27.6
140	40	-66.4
140	65	-17.6
140	90	4.1
140	115	13.6
140	140	Impact
140	165	43.2
140	190	62.8
140	215	93.8
140	240	22.
165	40	22.3
165	65	22.9
165	90	23.6
165	115	24.5
165	140	25.3
165	165	26
165	190	27
165	215	27.3

Table B. 36: Electrical Potential data for QI 6 plate, after 12 J impact; configuration 1.

x (mm)	y (mm)	EP (mV)
90	115	26.7
90	140	27.1
90	165	27.4
115	40	24.8
115	65	25.3
115	90	25.8
115	115	26.5
115	140	27.1
115	165	27.4
115	190	28.2
115	215	28.7
115	240	29
140	40	-75.4
140	65	-16.7
140	90	-10.5
140	115	8.4
140	140	Impact
140	165	40.4
140	190	47.7
140	215	76.7
140	240	190.3
165	40	23.6
165	65	23.9
165	90	24.5
165	115	25.1
165	140	25.7
165	165	26.4
165	190	27
165	215	27.6
165	240	28.1
190	115	25.4
190	140	25.7
190	165	26.1

Table B. 37: Electrical Potential data for QI 1 plate, before 2 J impact; configuration 2.

x (mm)	y (mm)	EP (mV)
90	115	26.7
90	140	27.1
90	165	27.4
115	40	24.8
115	65	25.3
115	90	25.8
115	115	26.5
115	140	27.1
115	165	27.3
115	190	28.2
115	215	28.7
115	240	28.9
140	40	-75.5
140	65	-15
140	90	-0.5
140	115	8.2
140	140	Impact
140	165	42.5
140	190	49.1
140	215	77.4
140	240	189.3
165	40	23.6
165	65	23.9
165	90	24.5
165	115	25.1
165	140	25.7
165	165	26.3
165	190	27
165	215	27.6
165	240	28
190	115	25.3
190	140	25.7
190	165	26

Table B. 38: Electrical Potential data for QI 1 plate, after 2 J impact; configuration 2.

x (mm)	y (mm)	EP(mV)
90	115	26.2
90	140	26.6
90	165	27
115	40	24.5
115	65	24.9
115	90	25.3
115	115	26
115	140	26.6
115	165	27.5
115	190	28.2
115	215	28
115	240	28.4
140	40	28.8
140	65	29.4
140	90	-136.4
140	115	-59.1
140	140	Impact
140	165	-17.6
140	190	8.6
140	215	47.9
140	240	73.8
165	40	75.5
165	65	175.8
165	90	25.3
165	115	25.8
165	140	26.5
165	165	27.2
165	190	27.8
165	215	28.7
165	240	29.26
190	115	29.7
190	140	29.9
190	165	27.6

Table B. 39: Electrical Potential data for QI 2 plate, before 4 J impact; configuration 2.

x (mm)	y (mm)	EP (mV)
90	115	26.2
90	140	26.6
90	165	27
115	40	24.5
115	65	24.9
115	90	25.3
115	115	25.9
115	140	26.6
115	165	27.5
115	190	28.2
115	215	28
115	240	28.4
140	40	28.8
140	65	29.4
140	90	-135.7
140	115	-54.8
140	140	Impact
140	165	-15.9
140	190	10.1
140	215	48.4
140	240	74.4
165	40	71.4
165	65	180
165	90	25.3
165	115	25.8
165	140	26.4
165	165	27.2
165	190	27.8
165	215	28.6
165	240	29.2
190	115	29.6
190	140	29.9
190	165	27.6

Table B. 40: Electrical Potential data for QI 2 plate, after 4 J impact; configuration 2.

x (mm)	y (mm)	EP(mV)	x (mm)	y (mm)	EP(mV)
90	115	25	165	40	24.1
90	140	25.3	165	65	24.6
90	165	25.7	165	90	25.2
115	40	23.5	165	115	25.9
115	65	23.8	165	140	26.7
115	90	24.3	165	165	27.4
115	115	24.8	165	190	28
115	140	25.5	165	215	28.7
115	165	26.1	165	240	29
115	190	26.9	190	115	26.4
115	215	27.4	190	140	26.8
115	240	28	190	165	27.2
140	40	-127.6			
140	65	-38			
140	90	-4.9			
140	115	10.6			
140	140	Impact			
140	165	30.9			
140	190	45.4			
140	215	52.7			
140	240	112.3			

Table B. 41: Electrical Potential data for QI 3 plate, before 6 J impact; configuration 2.

x (mm)	y (mm)	EP (mV)	x (mm)	y (mm)	EP (mV)
90	115	25.1	165	40	24.2
90	140	25.5	165	65	24.7
90	165	25.9	165	90	25.3
115	40	23.7	165	115	26
115	65	24	165	140	26.8
115	90	24.4	165	165	27.6
115	115	25	165	190	28.1
115	140	25.6	165	215	28.8
115	165	26.2	165	240	29.2
115	190	27	190	115	26.5
115	215	27.5	190	140	26.9
115	240	28.2	190	165	27.3
140	40	-132.4			
140	65	-37.8			
140	90	-6.6			
140	115	9.1			
140	140	Impact			
140	165	31.5			
140	190	44.9			
140	215	52.4			
140	240	111.4			

Table B. 42: Electrical Potential data for QI 3 plate, after 6 J impact; configuration 2.

x (mm)	y (mm)	EP (mV)
90	115	26
90	140	26.4
90	165	26.8
115	40	24.2
115	65	24.6
115	90	25.1
115	115	25.7
115	140	26.3
115	165	27.1
115	190	27.5
115	215	28
115	240	28.5
140	40	-95.9
140	65	-31.4
140	90	-9.6
140	115	8.9
140	140	Impact
140	165	30.6
140	190	41.6
140	215	53.2
140	240	91.1
165	40	24.4
165	65	24.7
165	90	25.2
165	115	25.7
165	140	26.3
165	165	26.8
165	190	27.4
165	215	27.9
165	240	28.4
190	115	26
190	140	26.4
190	165	26.8

Table B. 43: Electrical Potential data for QI 4 plate, before 8 J impact; configuration 2.

x (mm)	y (mm)	EP (mV)
90	115	26
90	140	26.4
90	165	26.8
115	40	24.2
115	65	24.6
115	90	25.1
115	115	25.7
115	140	26.3
115	165	27
115	190	27.5
115	215	28
115	240	28.5
140	40	-99.1
140	65	-33.3
140	90	-11.2
140	115	6.2
140	140	Impact
140	165	55.3
140	190	42
140	215	53.7
140	240	91.7
165	40	24.4
165	65	24.7
165	90	25.1
165	115	25.7
165	140	26.3
165	165	26.8
165	190	27.4
165	215	27.9
165	240	28.4
190	115	26
190	140	26.4
190	165	26.8

Table B. 44: Electrical Potential data for QI 4 plate, after 8 J impact; configuration 2.

x (mm)	y (mm)	EP(mV)
90	115	23.2
90	140	23.6
90	165	24
115	40	21.6
115	65	21.9
115	90	22.4
115	115	23
115	140	23.7
115	165	24.3
115	190	25
115	215	25.6
115	240	26.1
140	40	-53.7
140	65	-15.9
140	90	9.2
140	115	58.7
140	140	Impact
140	165	86.7
140	190	127.1
140	215	179
140	240	22.4
165	40	22.8
165	65	23.5
165	90	24.2
165	115	24.9
165	140	25.5
165	165	26.1
165	190	26.5
165	215	26.8
165	240	24.6
190	115	24.9
190	140	25.1

Table B. 45: Electrical Potential data for QI 5 plate, before 10 J impact; configuration 2.

x (mm)	y (mm)	EP (mV)
90	115	23.8
90	140	24.2
90	165	24.6
115	40	22.2
115	65	22.5
115	90	23
115	115	23.6
115	140	24.3
115	165	24.9
115	190	25.6
115	215	26.2
115	240	26.7
140	40	-55.5
140	65	-18.1
140	90	24.4
140	115	69
140	140	Impact
140	165	91.4
140	190	131.3
140	215	183.1
140	240	23
165	40	23.5
165	65	24.1
165	90	24.8
165	115	25.5
165	140	26.1
165	165	26.7
165	190	27.1
165	215	27.5
165	240	25.1
190	115	25.5
190	140	25.8

Table B. 46: Electrical Potential data for QI 5 plate, after 10 J impact; configuration 2.

x (mm)	y (mm)	EP(mV)	x (mm)	y (mm)	EP(mV)
90	115	25.1	165	40	24.4
90	140	25.4	165	65	25.0
90	165	25.8	165	90	25.5
115	40	23.5	165	115	26.1
115	65	23.9	165	140	26.8
115	90	24.3	165	165	27.4
115	115	24.9	165	190	28
115	140	25.5	165	215	28.4
115	165	26.1	165	240	28.7
115	190	26.9	190	115	26.3
115	215	27.7	190	140	26.7
115	240	28.4	190	165	27
140	40	-99.3			
140	65	-25.5			
140	90	1.5			
140	115	19.7			
140	140	Impact			
140	165	58.9			
140	190	85.9			
140	215	132.6			
140	240	212.5			

Table B. 47: Electrical Potential data for QI 6 plate, before 12 J impact; configuration 2.

x (mm)	y (mm)	EP (mV)	x (mm)	y (mm)	EP (mV)
90	115	25.1	165	40	24.4
90	140	25.4	165	65	25
90	165	25.8	165	90	25.5
115	40	23.6	165	115	26.1
115	65	23.9	165	140	26.7
115	90	24.4	165	165	27.3
115	115	24.9	165	190	27.9
115	140	25.5	165	215	28.4
115	165	26.1	165	240	28.7
115	190	26.8	190	115	26.3
115	215	27.5	190	140	26.7
115	240	28.2	190	165	26.9
140	40	-96.8			
140	65	-24			
140	90	5.1			
140	115	24.6			
140	140	Impact			
140	165	67.4			
140	190	97			
140	215	143.1			
140	240	232.2			

Table B. 48: Electrical Potential data for QI 6 plate, after 12 J impact; configuration 2.