Potential detector geometry for triplet polarimeter

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Potential detector

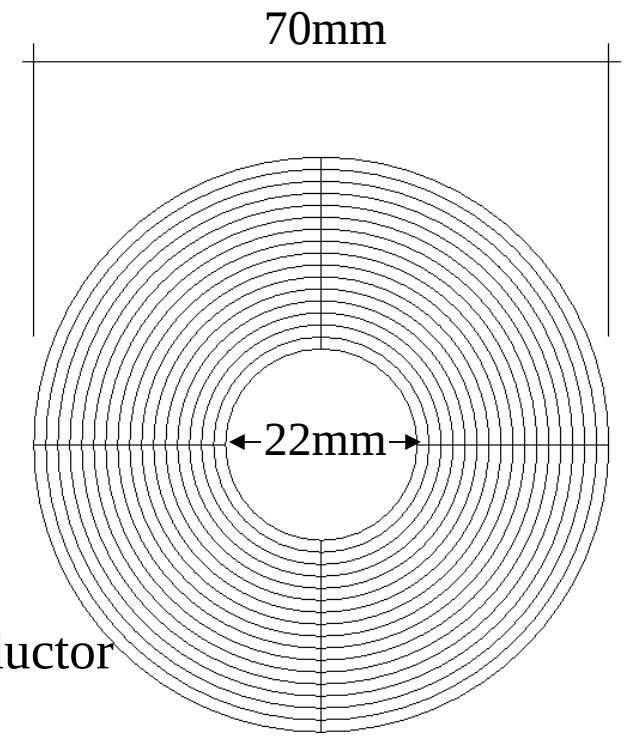
Front:
48 radial strips

Back:
16 sectors

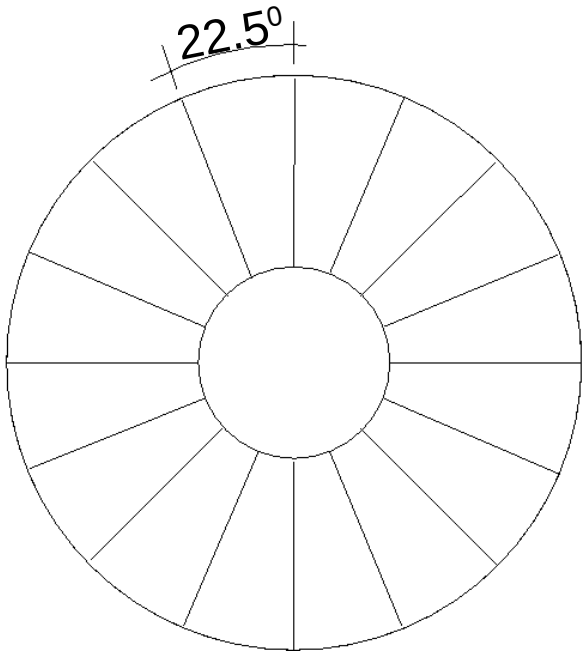
Cost: $7500

Manufacturer:
Micron Semiconductor

Front

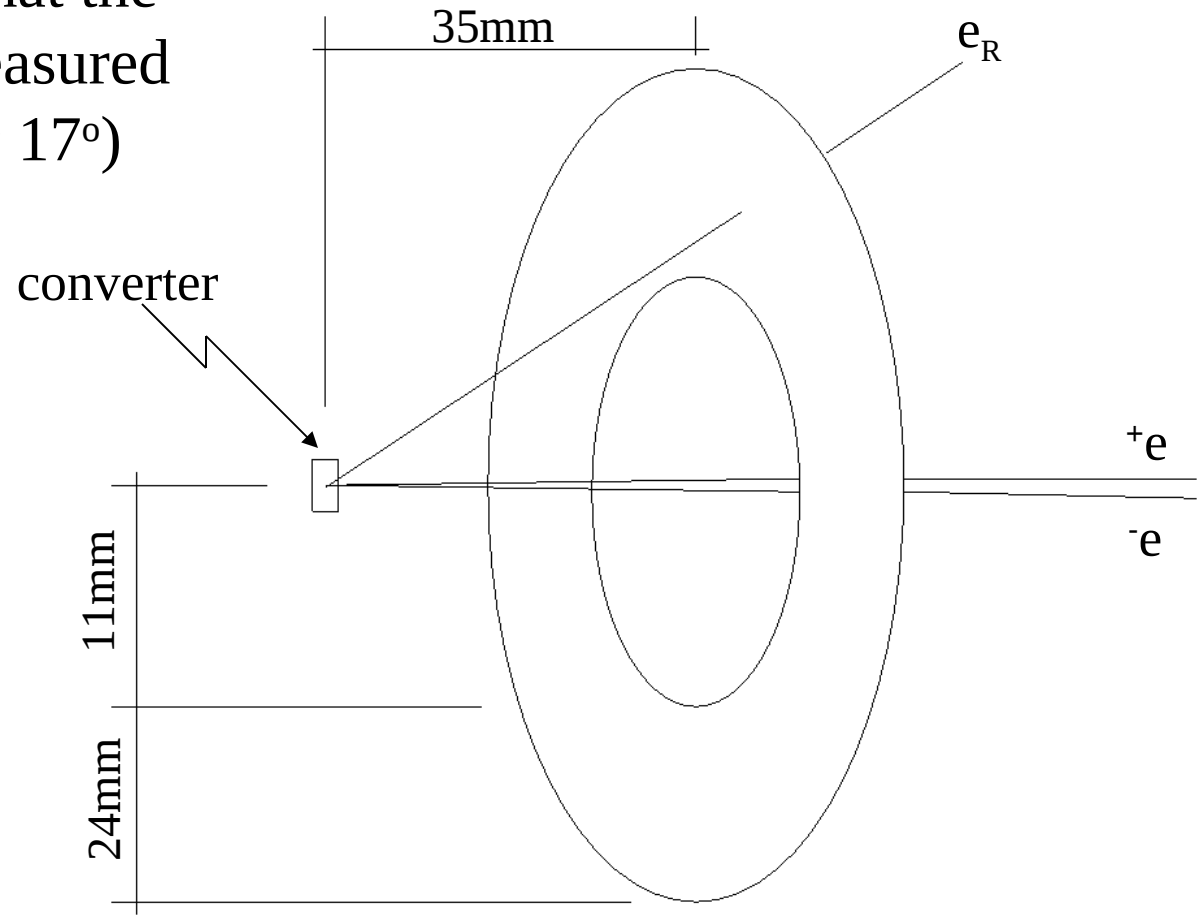


Back

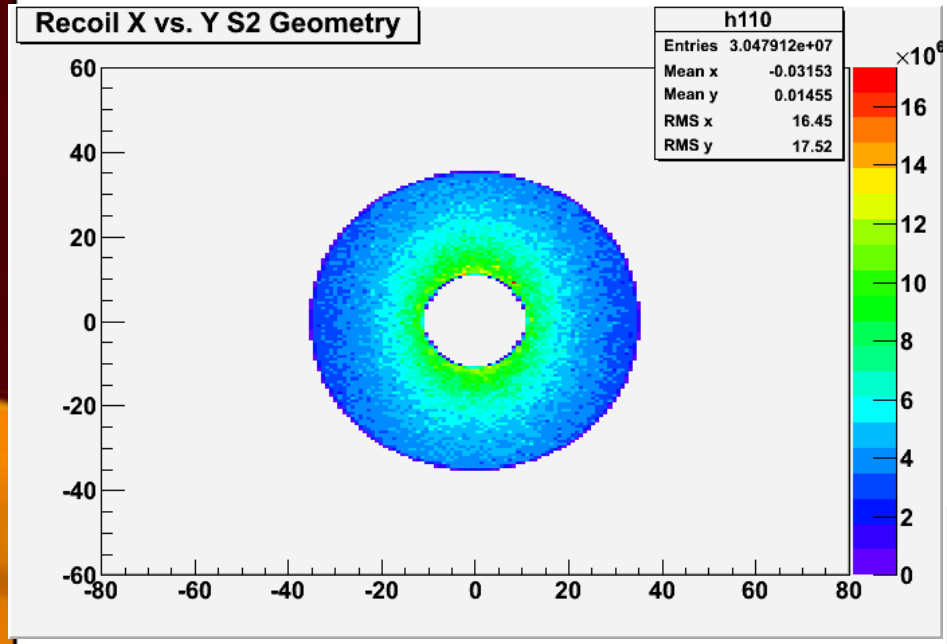


Geometry

Set the detector distance from converter such that the largest polar angle measured is 45^o (results in θ_{min} ~ 17^o)

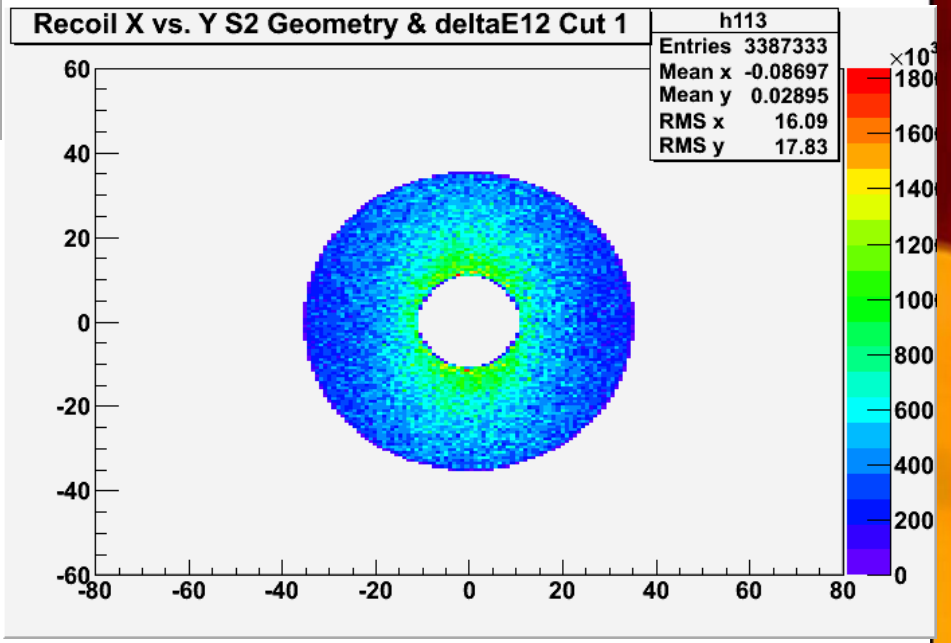


Simulated Recoil Electron Hits



No Energy Cut

Electron/Positron Energy Difference cut of 1GeV



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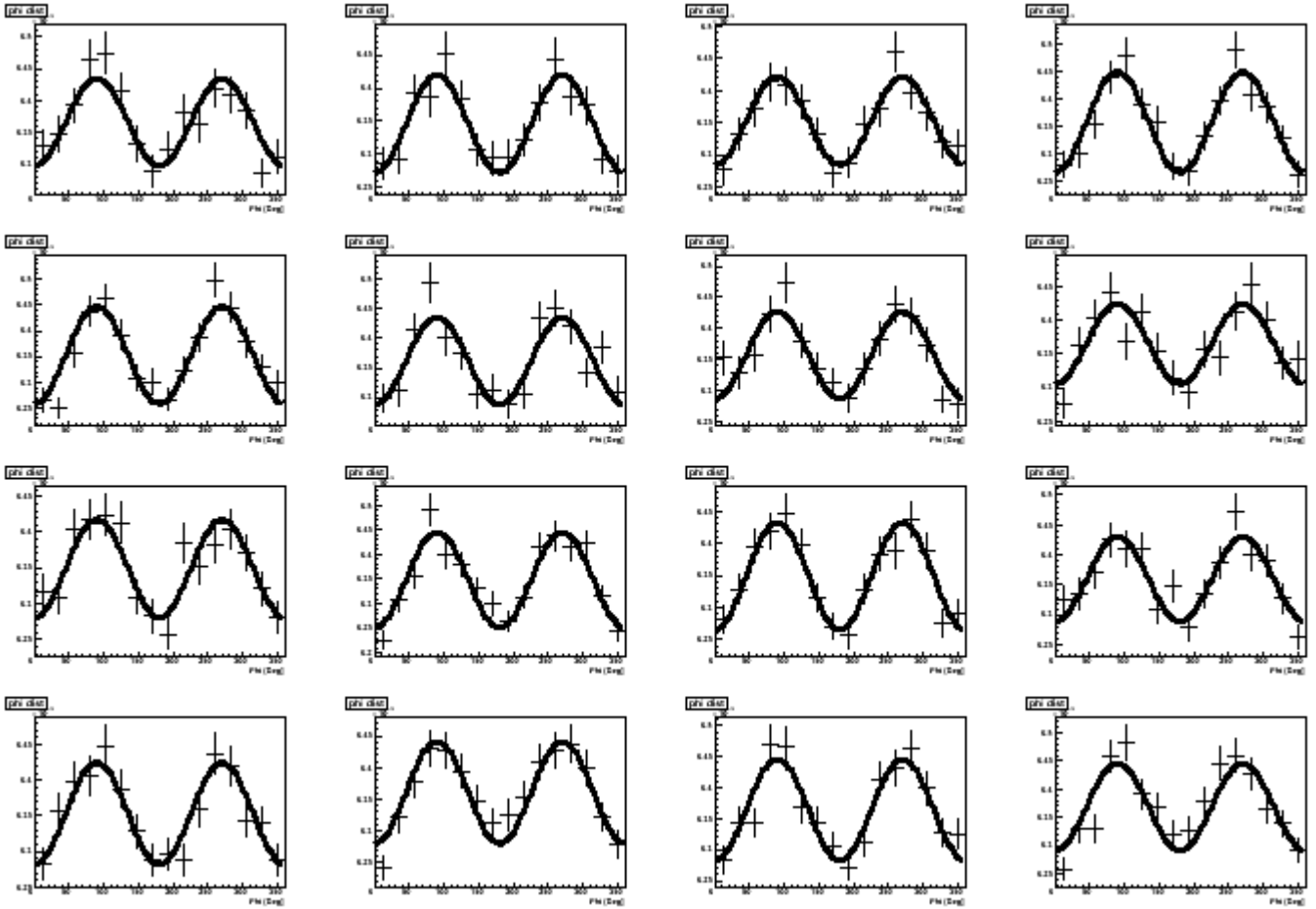
Triplet asymmetry fits

- 10 million generated event using Richard's code
- E_γ = 9.0 GeV
- Fit function: $A[1 + B\cos(2\varphi)]$



φ

Triplet asymmetry fit results

Zero order fit fo
0.5GeV Cut:
21.9 ± 0.5

1.0GeV Cut:
21.5 ± 0.4

1.5GeV Cut:
21.6 ± 0.3