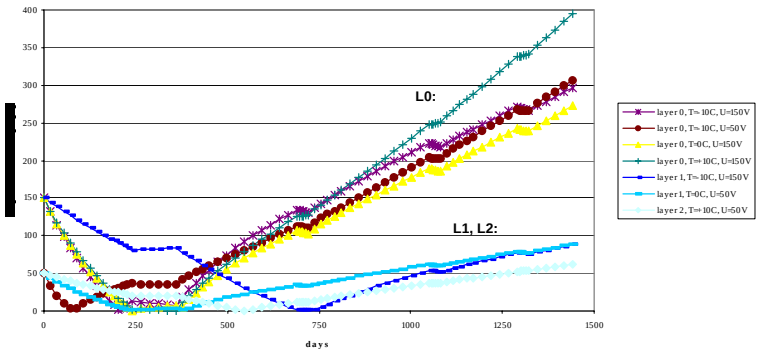
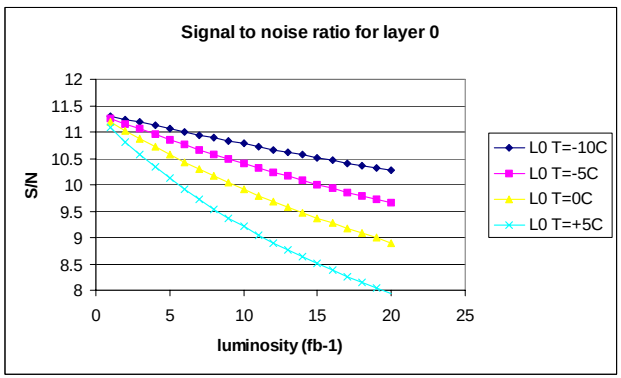
Sensor

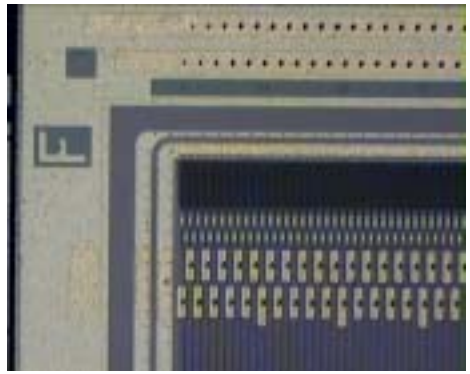
subject to a fluence of ~ $2\times10^{14}/cm^2$
equivalent to 1MeV neutrons



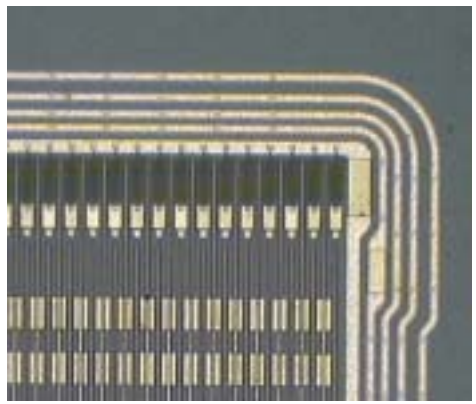
- Must hold high voltage ~700V
- Operation in low temperature



single sided detector

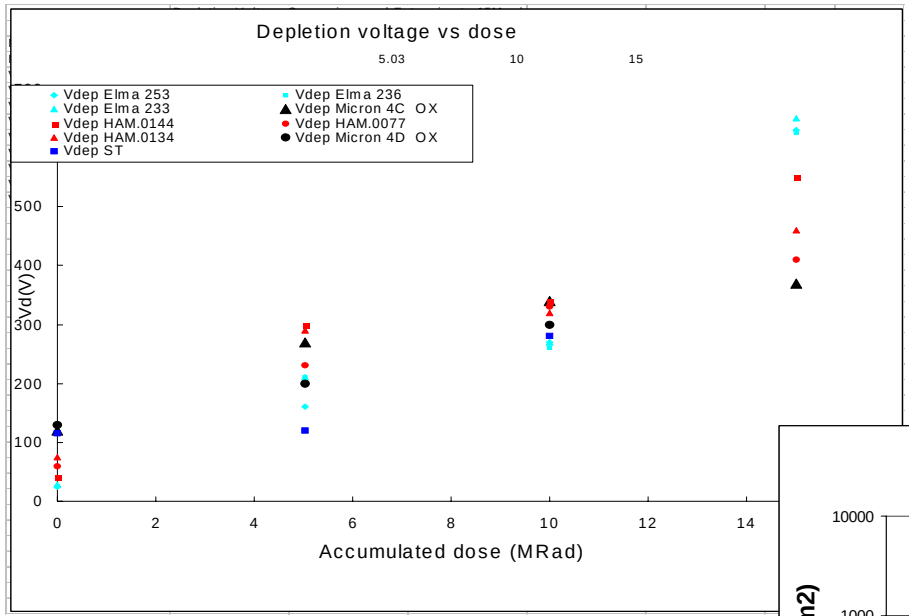


Hamamatsu
(single guard ring)

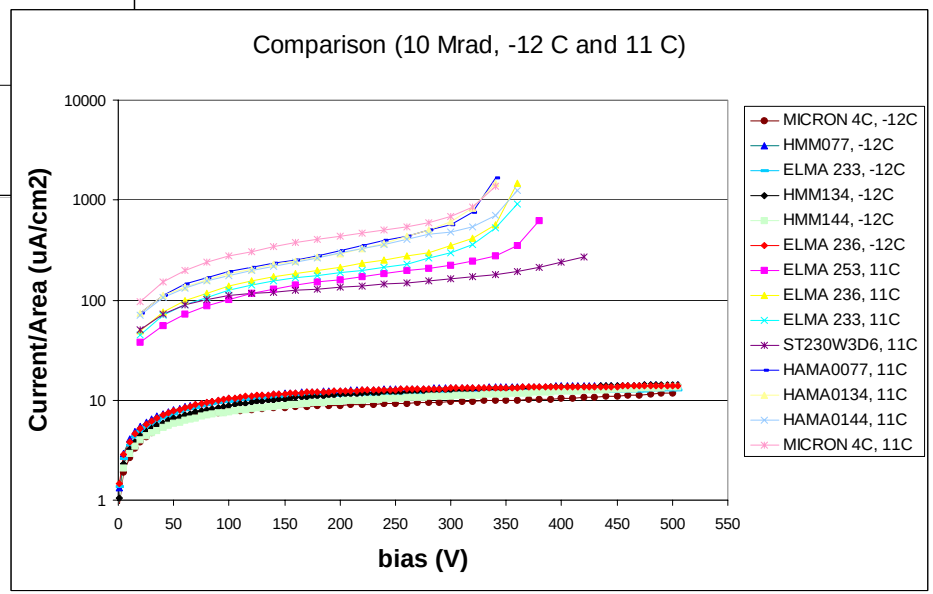


ELMA (multi guard ring)

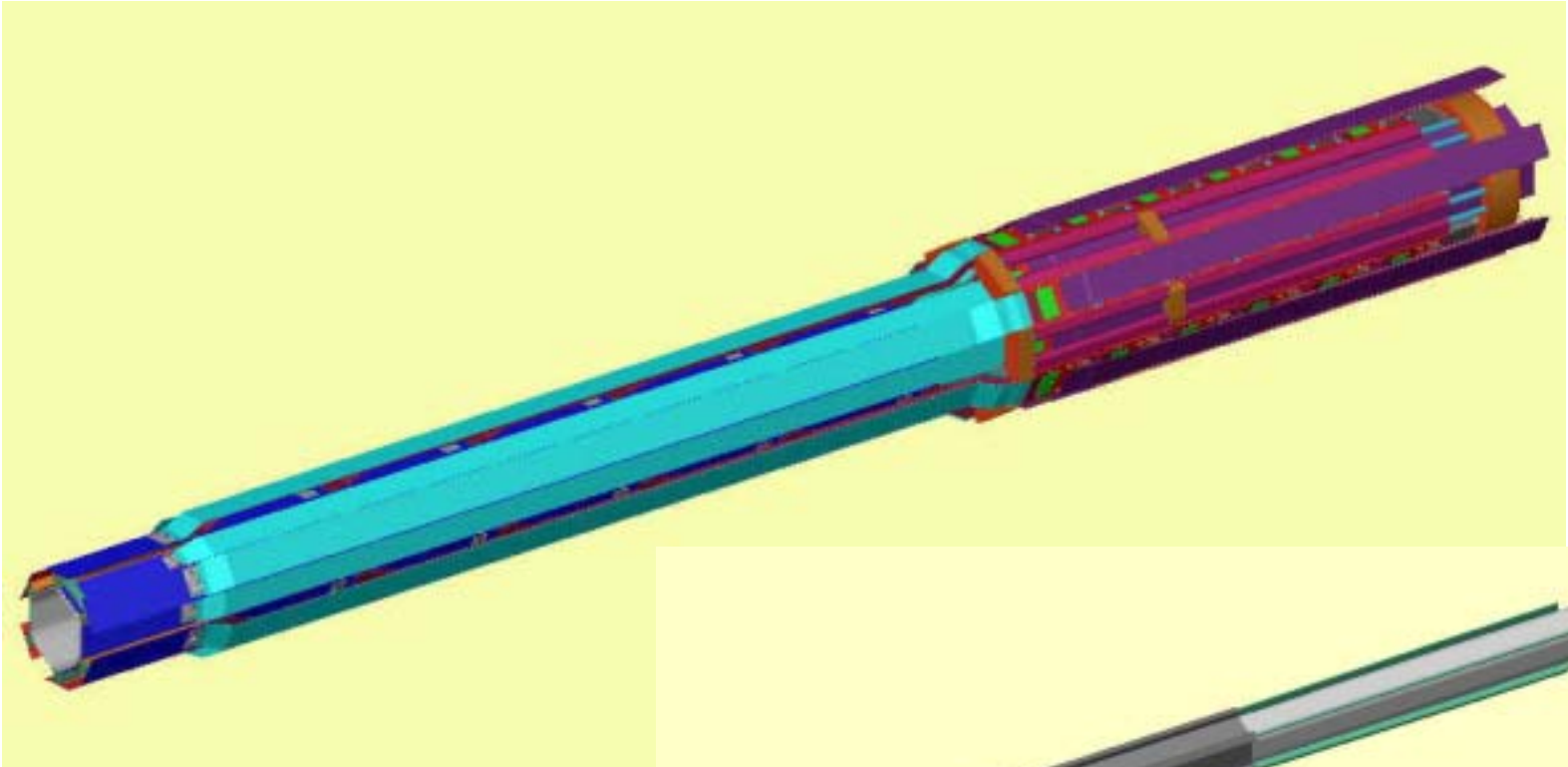
Sensor (cont'd)

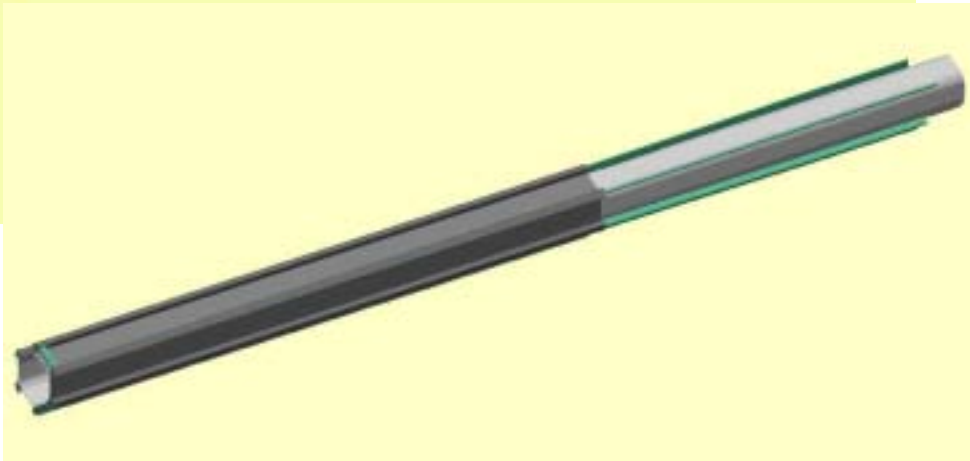


Irradiation test



Structure





Radiation Length

Min (2 cables)		Max (12 cables)	
100μm Kapton	0.04%	600μm Kapton	0.21%
3μm Cu (a)	0.02%	16μm Cu (a)	0.11%
300μm (b) polypropylene	0.07%	1300μm (b) polypropylene	0.32%
20μm Al (c)	0.02%	20μm Al (c)	0.02%
Total	0.15%	Total	0.66%

- (a) 16% of area occupancy is taken account.
- (b) 50% of volume occupancy assumed. May be possible to reduce.
- (c) heavy duty aluminum foil was measured to 20μm thick.
- 320 μm thick silicon ~ 0.34%.