

Electron Parameter	Nominal Value	Sensitivity Range
Energy Range	4.5-5.5 MeV	0.1%, 0.2%, 0.3%
Energy Step	0.1 MeV (1 keV)	1, 3, 5, 10, 20, 30 keV
RMS energy spread	0.2% (10 keV)	1, 5, 10, 20, 30, 50 keV
RMS sigma at radiator	1 mm	0.5, 1.5, 2.0, 3 mm
Position at radiator	0 (centered on radiator)	0.1, 0.5, 1.0, 2.0, 5 mm (off center)

Suggestions on how to study sensitivities:

1. Energy Range and Energy Step: use PL unfolding and Schiff formula to study sensitivities – see wiki.
2. RMS energy spread: use GEANT4, and for one energy (e.g., 5 MeV), measure photon spectra for different energy spreads.
3. RMS sigma on radiator: use GEANT4, and for one energy (e.g., 5 MeV), measure photon spectra for different beam size sigmas.
4. Position on radiator: use GEANT4, and for one energy (e.g., 5 MeV), measure photon spectra for different beam positions.