

Flux Tool

Flux Tool

Distance: 100 cm

Detector: Detective EX-100 (40%)

Energy ...	Nuclide	Peak CPS	Intr. Eff.	Flux on Det...	Flux ...	$\gamma/4\pi/s$
1377.75	Ra226	0.009173 ± 0.0	0.1127	(0.08136 ± 0.0	2.454e-0...	308.3 ± 71.
1592.44	Th232	0.01061 ± 0.0	0.09955	(0.1066 ± 0.0	3.214e-0...	403.8 ± 88.
1730.01	Ra226	0.01062 ± 0.0	0.09281	(0.1144 ± 0.0	3.451e-0...	433.6 ± 76.
964.50	Th232	0.02227 ± 0.0	0.1522	(0.1463 ± 0.0	4.412e-0...	554.4 ± 92.
726.93	Th232	0.03558 ± 0.0	0.19	(0.1873 ± 0.0	5.648e-0...	709.8 ± 88.
1237.88	Ra226	0.02683 ± 0.0	0.1236	(0.2171 ± 0.0	6.546e-0...	822.6 ± 105.
2103.16		0.01849 ± 0.0	0.07941	(0.2328 ± 0.0	7.022e-0...	882.4 ± 104.
968.80	Th232	0.04959 ± 0.0	0.1517	(0.327 ± 0.0	9.862e-0...	1239 ± 111
1120.23	Ra226	0.0535 ± 0.0	0.1345	(0.3978 ± 0.0	0.00012 ...	1507 ± 126
238.39	Th232	0.1704 ± 0.0	0.4128	(0.4129 ± 0.0	0.000124...	1565 ± 161
1764.46	Ra226	0.05419 ± 0.0	0.09129	(0.5936 ± 0.0	0.000179...	2250 ± 142

Copy To Clipboard

show more info

Close CSV

The Flux Tool converts the observed counts per second peak rates into the flux of that energy gamma or x-ray by accounting for the detector response and geometrical factor. For each energy, the tool gives the number of incident photons on the detector per second, the number of incident photons per cm² per second, and the total number of gammas into 4π steradians per second. This information can be useful for dose calculations, record keeping, or for export for specialized applications like density determinations.

The fluxes and total number of gammas into 4π steradians is the total emitted after any shielding. That is, the numbers given are the uncollided gammas after any shielding materials.

Since the output of this tool is primarily intended for export to use outside of InterSpec, you can either export to a CSV file, or copy the table to your clipboard to paste into other applications by clicking on the "Copy To Clipboard" button. When exported as a CSV file all information will always be included to full accuracy (the table displayed in the tool has limited number of significant figures), and when copied to the clipboard all columns shown in the tool will be copied with full accuracy.

In order for the table in the GUI to have any entries, you must enter a distance and have a detector response function (DRF) selected. The distance can be entered in nearly any reasonable format (ex. "3.2 cm", "4ft 8in", "5m", etc.), and the DRF can be selected by clicking or tapping on the detector widget in the upper right side of the tool to bring up the DRF selection tool. If either the DRF is not selected, or a valid distance is not entered, there will be a prominent message displayed.

The "show more info" check box lets you toggle between showing only the energy, CPS, flux per cm², and flux into 4π, and showing those same columns plus nuclide, intrinsic efficiency, geometric efficiency, and flux on detector. This option effects what information will be copied to the clipboard, but not what will be included in the CSV export.

Uncertainties given by this tool are based on the statistical uncertainty of the peak amplitude only, and currently do not include uncertainties of the DRF (note: only DRFs fit within InterSpec have uncertainties), or anything else.