

**Table 1: NRL Irradiation Facility Neutron Fluxes and Neutron & Gamma Dose Rates**

Facility	Total Neutron Flux (n/cm <sup>2</sup> /s)	Percent Thermal (%)	Thermal Neutron Flux (n/cm <sup>2</sup> /s)  (E <sub>n</sub> <0.5 eV)	epi-Cd Neutron Flux (n/cm <sup>2</sup> /s)  (E <sub>n</sub> >0.5 eV)	1.0 MeV Eq Neutron Flux (n/cm <sup>2</sup> /s)	Neutron Dose Rate in Si (rad-Si/hr)	Gamma Dose Rate in Si (rad-Si/hr)
					F <sub>D,1.0 MeV,Si</sub> = 95 MeV•mb F <sub>D,1.0 MeV,GaAs</sub> = 70 MeV•mb (Ref: ASTM E722-14)		
1.3" CIF	2.9E13*	62	1.7E13*	1.2E13*	5.8E12 (Si) <sup>†</sup> 6.2E12 (GaAs) <sup>†</sup>	1.7E06	8.7E07‡
2.4" AIF	1.1E13§	49	5.6E12§	5.8E12§	2.8E12 (Si) <sup>†</sup> 3.0E12 (GaAs) <sup>†</sup>	8.2E05	3.8E07‡
Rabbit	3.8E12**	73	2.8E12**	1.0E12**	5.6E11 (Si) <sup>†</sup> 6.1E11 (GaAs) <sup>†</sup>	1.6E05	
6.5" External Dry Tube	1.6E12††	73	1.2E12††	4.5E11††	2.0E11 (Si) <sup>†</sup> 2.4E11 (GaAs) <sup>†</sup>	6.6E04	7.6E06‡
9.5" External Dry Tube (Flux Box Evacuated)	1.3E12‡‡	67	8.7E11‡‡	4.2E11‡‡	2.3E11 (Si) <sup>†</sup> 2.5E11 (GaAs) <sup>†</sup>	6.8E04	4.4E06‡
Beam Port #1 (BP1) Sample Holder Position	4.2E12§§	54	2.3E12§§	1.9E12§§	1.0E12 (Si) <sup>†</sup> 1.1E12 (GaAs) <sup>†</sup>	3.1E05	
Functional Test Vessel (FTV) in BP1	1.4E11***	4	6.2E09***	1.4E11***	6.8E10 (Si) <sup>†</sup> 6.9E10 (GaAs) <sup>†</sup>	2.0E04	1.4E06‡
Beam Port #2 (BP2) External Beam Line Facility			4.4E6†††				
Thermal Column G7, core end, stringer open			2.5E11‡‡‡				

Note: All values are for 450 kW operation, except for the FTV in BP1 which is limited to 25 kW

\* NRL memo 2019-13, "CIF Neutron Spectrum Measurement"

† NRL memo 2013-12 Rev. 06, "1.0 MeV Equivalent Flux Calculations in Si and GaAs"

‡ NRL memo 2016-17 Rev. 03, "Gamma Dose Rates of Reactor Facilities"

§ NRL memo 2019-14, "AIF Neutron Spectrum Measurement"

\*\* NRL memo 2019-18, "Rabbit Neutron Spectrum Measurement"

†† NRL memo 2019-19, "6.5-inch External DryTube Neutron Spectrum Measurement"

‡‡ NRL memo 2019-25, "9.5-Inch External Dry Tube (Flux Box Evacuated) Neutron Spectrum Measurement"

§§ NRL memo 2015-07 Rev. 1, "BP1 Sample Holder Neutron Spectrum Measurement"

\*\*\* NRL memo 2018-15, "Functional Test Vessel Neutron Spectrum Measurement"

††† NRL memo 2015-05 Rev. 1, "BP2 Facility Flux Measurements"

‡‡‡ NRL memo 2015-08 Rev. 2, "TC Thermal Flux Measurements"

**Table 2: NRL Irradiation Facility Dimensions**

<b>Facility</b>	<b>Inner Dimension</b>
CIF	1.3" Diameter
AIF	2.4" Diameter
Rabbit	1.1" Diameter *
6.5" Movable Dry Tube	6.6" Diameter
9.5" Movable Dry Tube	9.5" Diameter
Beam Port #1 (BP1) Sample Holder Position	2.0" Diameter x 3.7" Height
Function Test Vessel in BP1	Phenolic mounting board
Beam Port #2 (BP2) External Beam Line Facility	~30 mm Diameter
Thermal Column	4" x 4" Square/Stringer

\* 1.10" is the ID of the mouth of the polyethylene bottles used in the rabbit facility