

Time (min)	L	B/B ₀	>74MeV	>76MeV	>77MeV	>78MeV	>79MeV	>81MeV	>82MeV	>83MeV	>84MeV	>86MeV	>87MeV	>88MeV	>89MeV	>91MeV	>92MeV	>93MeV	>94MeV	TOTALS	
5	1.44168	2.14962	1.790E+02 (0.05652rad, 0.00339rad)	1.764E+02 (0.05720rad, 0.00343rad)	1.750E+02 (0.05749rad, 0.00345rad)	1.737E+02 (0.05781rad, 0.00347rad)	1.724E+02 (0.05811rad, 0.00349rad)	1.697E+02 (0.05865rad, 0.00352rad)	1.682E+02 (0.05885rad, 0.00353rad)	1.668E+02 (0.05907rad, 0.00354rad)	1.654E+02 (0.05928rad, 0.00356rad)	1.626E+02 (0.05966rad, 0.00358rad)	1.613E+02 (0.05987rad, 0.00359rad)	1.599E+02 (0.06004rad, 0.00360rad)	1.586E+02 (0.06023rad, 0.00361rad)	1.559E+02 (0.06053rad, 0.00363rad)	1.546E+02 (0.06139rad, 0.00364rad)	1.533E+02 (0.06083rad, 0.00365rad)	1.520E+02 (0.06096rad, 0.00366rad)	1.00649rad, 0.06034rad	
6	1.51254	2.50334	2.637E+02 (0.08326rad, 0.00500rad)	2.584E+02 (0.08379rad, 0.00503rad)	2.588E+02 (0.08404rad, 0.00504rad)	2.532E+02 (0.08426rad, 0.00506rad)	2.506E+02 (0.08447rad, 0.00507rad)	2.453E+02 (0.08478rad, 0.00509rad)	2.425E+02 (0.08484rad, 0.00509rad)	2.397E+02 (0.08489rad, 0.00509rad)	2.370E+02 (0.08494rad, 0.00510rad)	2.316E+02 (0.08498rad, 0.00510rad)	2.289E+02 (0.08497rad, 0.00510rad)	2.263E+02 (0.08497rad, 0.00510rad)	2.237E+02 (0.08495rad, 0.00510rad)	2.187E+02 (0.08491rad, 0.00509rad)	2.162E+02 (0.08487rad, 0.00509rad)	2.137E+02 (0.08480rad, 0.00509rad)	2.112E+02 (0.08471rad, 0.00508rad)	1.43843rad, 0.08632rad	
7	1.62236	2.90373	4.556E+02 (0.14385rad, 0.00863rad)	4.424E+02 (0.14346rad, 0.00861rad)	4.360E+02 (0.14324rad, 0.00859rad)	4.296E+02 (0.14297rad, 0.00858rad)	4.234E+02 (0.14271rad, 0.00856rad)	4.104E+02 (0.14183rad, 0.00851rad)	4.037E+02 (0.14124rad, 0.00847rad)	3.970E+02 (0.14059rad, 0.00844rad)	3.905E+02 (0.13996rad, 0.00840rad)	3.778E+02 (0.13863rad, 0.00832rad)	3.717E+02 (0.13798rad, 0.00828rad)	3.656E+02 (0.13727rad, 0.00824rad)	3.596E+02 (0.13655rad, 0.00819rad)	3.479E+02 (0.13508rad, 0.00810rad)	3.422E+02 (0.13432rad, 0.00806rad)	3.366E+02 (0.13356rad, 0.00801rad)	3.311E+02 (0.13279rad, 0.00797rad)	2.36603rad, 0.14196rad	
8	1.73976	3.34539	2.810E+02 (0.08872rad, 0.00540rad)	2.685E+02 (0.08707rad, 0.00522rad)	2.625E+02 (0.08624rad, 0.00517rad)	2.566E+02 (0.08540rad, 0.00512rad)	2.508E+02 (0.08454rad, 0.00507rad)	2.394E+02 (0.08274rad, 0.00496rad)	2.338E+02 (0.08180rad, 0.00491rad)	2.284E+02 (0.08088rad, 0.00485rad)	2.230E+02 (0.07992rad, 0.00480rad)	2.127E+02 (0.07805rad, 0.00468rad)	2.078E+02 (0.07714rad, 0.00463rad)	2.029E+02 (0.07618rad, 0.00457rad)	1.982E+02 (0.07526rad, 0.00452rad)	1.890E+02 (0.07338rad, 0.00440rad)	1.846E+02 (0.07246rad, 0.00438rad)	1.803E+02 (0.07154rad, 0.00429rad)	1.760E+02 (0.07059rad, 0.00424rad)	1.26651rad, 0.08121rad	
9	1.86325	3.82043	1.510E+02 (0.04768rad, 0.00286rad)	1.427E+02 (0.04627rad, 0.00278rad)	1.388E+02 (0.04560rad, 0.00274rad)	1.349E+02 (0.04489rad, 0.00269rad)	1.311E+02 (0.04419rad, 0.00265rad)	1.241E+02 (0.04289rad, 0.00257rad)	1.207E+02 (0.04223rad, 0.00253rad)	1.175E+02 (0.04161rad, 0.00250rad)	1.144E+02 (0.04100rad, 0.00246rad)	1.083E+02 (0.03974rad, 0.00238rad)	1.054E+02 (0.03912rad, 0.00235rad)	1.026E+02 (0.03852rad, 0.00231rad)	9.986E+01 (0.03792rad, 0.00228rad)	9.458E+01 (0.03672rad, 0.00220rad)	9.205E+01 (0.03613rad, 0.00217rad)	8.959E+01 (0.03555rad, 0.00213rad)	8.719E+01 (0.03497rad, 0.00210rad)	0.65529rad, 0.04170rad	
10	1.99131	4.31882	8.930E+01 (0.02819rad, 0.00169rad)	8.392E+01 (0.02721rad, 0.00163rad)	8.135E+01 (0.02673rad, 0.00160rad)	7.886E+01 (0.02624rad, 0.00157rad)	7.644E+01 (0.02577rad, 0.00155rad)	7.206E+01 (0.02490rad, 0.00149rad)	7.007E+01 (0.02452rad, 0.00147rad)	6.814E+01 (0.02413rad, 0.00145rad)	6.626E+01 (0.02375rad, 0.00142rad)	6.265E+01 (0.02299rad, 0.00138rad)	6.092E+01 (0.02261rad, 0.00136rad)	5.924E+01 (0.02224rad, 0.00133rad)	5.761E+01 (0.02188rad, 0.00131rad)	5.447E+01 (0.02115rad, 0.00127rad)	5.297E+01 (0.02079rad, 0.00125rad)	5.151E+01 (0.02044rad, 0.00123rad)	5.009E+01 (0.02009rad, 0.00121rad)	0.40363rad, 0.02421rad	
11	2.12248	4.82912	3.368E+01 (0.01063rad, 0.00064rad)	3.137E+01 (0.01017rad, 0.00061rad)	3.027E+01 (0.00994rad, 0.00060rad)	2.922E+01 (0.00972rad, 0.00058rad)	2.820E+01 (0.00951rad, 0.00057rad)	2.641E+01 (0.00913rad, 0.00055rad)	2.564E+01 (0.00897rad, 0.00054rad)	2.489E+01 (0.00881rad, 0.00053rad)	2.416E+01 (0.00866rad, 0.00052rad)	2.276E+01 (0.00835rad, 0.00050rad)	2.210E+01 (0.00820rad, 0.00049rad)	2.145E+01 (0.00805rad, 0.00048rad)	2.082E+01 (0.00791rad, 0.00047rad)	1.962E+01 (0.00762rad, 0.00046rad)	1.904E+01 (0.00747rad, 0.00045rad)	1.849E+01 (0.00734rad, 0.00044rad)	1.795E+01 (0.00720rad, 0.00043rad)	0.14768rad, 0.00886rad	
12	2.25532	5.33932	1.164E+01 (0.00368rad, 0.00022rad)	1.071E+01 (0.00347rad, 0.00021rad)	1.028E+01 (0.00338rad, 0.00020rad)	9.858E+00 (0.00328rad, 0.00020rad)	9.456E+00 (0.00319rad, 0.00019rad)	8.731E+00 (0.00302rad, 0.00018rad)	8.404E+00 (0.00294rad, 0.00018rad)	8.089E+00 (0.00286rad, 0.00017rad)	7.786E+00 (0.00279rad, 0.00017rad)	7.214E+00 (0.00265rad, 0.00016rad)	6.973E+00 (0.00259rad, 0.00016rad)	6.83E+00 (0.00251rad, 0.00015rad)	6.433E+00 (0.00244rad, 0.00015rad)	5.960E+00 (0.00231rad, 0.00014rad)	5.737E+00 (0.00225rad, 0.00014rad)	5.522E+00 (0.00219rad, 0.00013rad)	5.315E+00 (0.00213rad, 0.00013rad)	0.04768rad, 0.00288rad	
13	2.38857	5.83768	4.464E+00 (0.00141rad, 0.00008rad)	4.057E+00 (0.00132rad, 0.00008rad)	3.868E+00 (0.00127rad, 0.00008rad)	3.688E+00 (0.00123rad, 0.00007rad)	3.516E+00 (0.00119rad, 0.00007rad)	3.202E+00 (0.00111rad, 0.00007rad)	3.059E+00 (0.00107rad, 0.00006rad)	2.922E+00 (0.00103rad, 0.00006rad)	2.719E+00 (0.00097rad, 0.00006rad)	2.547E+00 (0.00093rad, 0.00006rad)	2.433E+00 (0.00090rad, 0.00005rad)	2.324E+00 (0.00087rad, 0.00005rad)	2.220E+00 (0.00084rad, 0.00005rad)	2.026E+00 (0.00079rad, 0.00005rad)	1.935E+00 (0.00076rad, 0.00005rad)	1.848E+00 (0.00073rad, 0.00004rad)	1.766E+00 (0.00071rad, 0.00004rad)	0.01713rad, 0.00102rad	
14	2.52112	6.31360	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0rad, 0rad
TOTALS																					7.34887rad, 0.44842rad

Skin dose Calculations

$$(\text{Protons/cm}^2/\text{s}) * (100^2\text{cm}^2) * (3600\text{s/hr}) = \text{Protons/m}^2/\text{hr}$$

$$(\text{Protons/m}^2/\text{hr}) * 2\text{m}^2 = \text{Protons/hr}$$

$$\text{Protons/hr} * (E \text{ MeV/Proton}) = E \text{ MeV/hr}$$

$$(E \text{ MeV/hr}) * (1.6 * 10^{-13} / \text{MeV}) = \text{Joules/hr}$$

$$(\text{Joules/hr}) / 4.5\text{kg} = \text{Gray/hr}$$

$$(\text{Gray/hr}) * 100\text{rad/Gray} = \text{rad/hr}$$

$$\text{Rad/hr} * 1/60 = \text{rad/min}$$

Depth dose Calculations

$$(\text{Protons/cm}^2/\text{s}) * (100^2 \text{cm}^2) * (3600 \text{s/hr}) = \text{Protons/m}^2/\text{hr}$$

$$(\text{Protons/m}^2/\text{hr}) * 2 \text{m}^2 = \text{Protons/hr}$$

$$\text{Protons/hr} * (E \text{ MeV/Proton}) = E \text{ MeV/hr}$$

$$(E \text{ MeV/hr}) * (1.6 * 10^{-13} / \text{MeV}) = \text{Joules/hr}$$

$$(\text{Joules/hr}) / 75 \text{kg} = \text{Gray/hr}$$

$$(\text{Gray/hr}) * 100 \text{rad/Gray} = \text{rad/hr}$$

$$\text{Rad/hr} * 1/60 = \text{rad/min}$$