

TN0004
Some Useful Parameters of Medical Proton Beams

Proton Energy (MeV)	Beta (v/c)	Magnetic Rigidity (Tm)	Range in water (cm)	Typical IC gain (mm ⁻¹ air gap)
30	0.2470	0.7977	0.884	61.2
40	0.2830	0.9236	1.486	47.7
50	0.3140	1.0353	2.224	40.3
60	0.3415	1.1370	3.089	34.5
70	0.3661	1.2313	4.075	30.8
80	0.3885	1.3197	5.176	27.8
90	0.4091	1.4033	6.389	25.2
100	0.4282	1.4830	7.707	23.5
110	0.4459	1.5593	9.128	21.9
120	0.4625	1.6327	10.65	20.5
130	0.4781	1.7036	12.26	19.4
140	0.4928	1.7723	13.96	18.5
150	0.5066	1.8391	15.76	17.5
160	0.5198	1.9041	17.63	16.8
170	0.5322	1.9675	19.59	16.2
180	0.5441	2.0295	21.63	15.4
190	0.5554	2.0902	23.74	14.8
200	0.5662	2.1496	25.93	14.4
210	0.5765	2.2080	28.19	14.2
220	0.5863	2.2654	30.52	13.6
230	0.5958	2.3218	32.91	13.5
240	0.6049	2.3774	35.37	12.9
250	0.6136	2.4321	37.90	12.5

Speed of light	299792458	m s ⁻¹
Proton charge	1.6021766E-19	C
Proton mass	1.6726218E-27	kg