

# LINAC Beam Information

The full LINAC booster has become operational since 2007. An estimate of available beam energies, based on measured average  $E_{\text{gain}} \sim 8.6 \text{ MeV/q}$  in the previous operations is given below:

Pelletron Terminal voltage = 12 MV

Z	A	$Q_s$	$\beta_{\text{pell}}$	$E_{\text{pell}}(\text{MeV})$	$Q_{s2}$	$E_{\text{linac}}(\text{MeV})$
8	16	6	0.106	84	8	150
9	19	6	0.097	84	8	150
14	28	8	0.091	108	12	210
16	32	8	0.085	108	14	230
17	35	9	0.086	120	15	250

$Q_s$ : Most probable charge state at terminal foil stripper

$E_{\text{pell}} (\beta_{\text{pell}})$ : Energy (velocity) at Pelletron exit

$Q_{s2}$ : Most probable charge state after post tandem foil stripper

- For lower Pelletron terminal voltage ( $< 12 \text{ MV}$ ), velocity matching into LINAC will be very poor resulting in significantly lower energy gain than indicated in the above table.
- Taking into account the loss of beam due to bunching and by the post tandem foil stripper, expected beam intensity on the target will be 1-5 pA (assuming 500 enA injection into the Pelletron).

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