

ENTRY NO: C-28
Machine Name: C-30
Date: 6/6/01 3:10:16 AM
Institution: A.Soltan Institute for Nuclear Studies
Address 05-400 Otwock-Swierk, Poland
In Charge of Cyclotron: J. Wojtkowska
Telephone: +48 22 718 05 40
Fax: +48 22 779 34 21
Person Reporting: E. Plawski
Web: www.ipj.gov.pl
E-mail: plawski@ipj.gov.pl

HISTORY

Designed By: Accel. Phys. and Technology DEp. of Institute

Construction Dates: 1983 - 1989

First Beam Date: 1989, 1991 at full energy

CHARACTERISTIC BEAMS

ions	/ energy(MeV/N)	/current(pps)	/power(w)
H ₋ -> p	28	1 micro	average
p internal	30	150 micro	in pulse

transmission efficiency(source to extract beam)

typical: 20 for H₋% - **best:** %

tranverse emittance

emittance definition:

vertical: π mm mrad

horizontal: π mm mrad

longitudinal: (Δ) E/E)%xdeg RF

USES

basic research: 20%

therapy: 70%

development: %

isotope production: %

other: %

maintenance: 10%

beam tuning: %

Total Time: 1000h/year

TECHNICAL DATA

a)magnet: type: compact

Kb: 30MeV/A **Kf:** 50MeV/A

average field (min/max): 1.8 fixed T

number of magnet sectors: 4

hill angular width: 45 deghill angular width

spiral (max): 0 deg

pole parameters

diameter: 1.05 m

injection radius: m

extraction radius: 0.45 m

hill gap: 0.02 minm **valley gap:** 0.1m

trim coils

-number: nonex2

-current(max): A-turns

harmonic coils

-number: nonexNsectorsx2

-current(max): A-turns

main coils

number: 2x2

total ampere-turns: 164000 A-turns

current: 350 A

stored energy: MJ

weight - iron: 38t coils: 1.4t

power

main coils (total): 65 kW

trim coils (total max): kW

refrigerator (cryogenic): kW

b)RF

acceleration

frequency range: 52.78 fixedMHz

harmonic modes: 2

number of dees: 2

number of cavities: 2

dee angular width: 45degrees

voltage

at injection: 50kV(peak to ground, max)

at extraction: 5% lowerkV(peak to ground, max)

peak: kV(peak to ground, max)

line power(max): 25 in pulsekW

stability

phase: deg

voltage: %

injection

c)ion source: PIG internal

external injection: planned axial

components: Multicusp, 90deg bend,magn. quad.

quadruplet,solenoid, correct., spiral inflect.

source bias voltage: 18kV

injection energy: 0.018MeV/N

buncher: place foreseen

injection efficiency: %

d)injector:

e)extraction

stripping on Al foils

efficiency

typical: 80%

best: %

f)vacuum

pumps: 2x 2000 l/s oil diff.

achieved vacuum: 0.0001Pa

REFERENCES

IEEE Trans.Nucl.Sci.,vol.NS-32,5/1985/ 11th Cyclotron Conf.,

Tokyo, 76-79 /1986/ 15th Cyclotron Conf., Caen, 435-438/

1998/

EXPERIMENTAL FACILITIES

1m scattering chamber, Equipment for targets irradiation(

isotope production)

COMMENTS