

ENTRY NO: C-30
Machine Name: U-200
Date: 8/23/01 7:47:03 AM
Institution: FLNR JINR
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HISTORY

Designed By: FLNR JINR
Construction Dates: 1966-67
First Beam Date: 1968

CHARACTERISTIC BEAMS

ions	/ energy(MeV/N)/current(pps)/power(w)
4 He1+	9 3x10 14
12 C3+	9 3x10 13

transmission efficiency(source to extract beam)

typical: % - **best:** %

transverse emittance

emittance definition:

vertical: 10π mm mrad

horizontal: 30π mm mrad

longitudinal: $1\%(\Delta) E/E\% \times \text{deg RF}$

USES

basic research: %	therapy: %
development: %	isotope production: 50%
other: 50%	maintenance: %
beam tuning: %	Total Time: 500h/year

TECHNICAL DATA

a)magnet: **type:** compact

Kb: MeV/A **Kf:** MeV/A

average field (min/max): 2/1.93 T

number of magnet sectors: 4

hill angular width: 45hill angular width

spiral (max): deg

pole parameters

diameter: 2 m

injection radius: m

extraction radius: m

hill gap: 0.03m **valley gap:** 0.15m

trim coils

-number: 7x2

-current(max): A-turns

harmonic coils

-number: 2xNsectorsx2

-current(max): A-turns

main coils

number: 1x2

total ampere-turns: 3.6×10^5 A-turns

current: 1300 A

stored energy: MJ

weight - iron: t **coils:** t

power

main coils (total): 350 kW

trim coils (total max): 20 kW

refrigerator (cryogenic): kW

b)RF

acceleration

frequency range: 12-21.8MHz

harmonic modes: 2-4
number of dees: 2
number of cavities: 2
dee angular width: 42degrees

voltage

at injection: kV(peak to ground, max)

at extraction: kV(peak to ground, max)

peak: 75kV(peak to ground, max)

line power(max): 180-240kW

stability

phase: deg

voltage: 1%

injection

c)ion source: PIG

external injection:

components:

source bias voltage: kV

injection energy: MeV/N

buncher:

injection efficiency: %

d)injector:

e)extraction

Stripping foil

efficiency

typical: %

best: %

f)vacuum

pumps: oil pumps

achieved vacuum: 2.7×10^{-4} Pa

REFERENCES

1.Entry NC43 in Proc. of the 13th Int. Conf., Cyclotrons and Their Applications, Vancoover,1992,p. 821 2. Gikal B.N. in JINR Proprint 9-83-311,1983

EXPERIMENTAL FACILITIES

COMMENTS