

ENTRY NO: C30
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Machine Name: U-200
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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)			
4He1+	9	3x10 14	1800
12C3+	9	3x10 13	540

Transmission Efficiency (source to extracted beam)

Typical (%):

Best (%):

Emittance

Emittance Definition:

Vertical (pi mm mrad): 10

Horizontal (pi mm mrad): 30

Longitudinal (dE/E[%] x RF(deg.)): 1%

USES

Basic Research (%):

Development (%):

Therapy (%):

Isotope Production (%): 50

Other Application (%): 50

Maintenance (%):

Beam Tuning (%):

Total Time (h/year): 500

TECHNICAL DATA

(a)Magnet

Type: compact

Kb (MeV):

Kf (MeV):

Average Field (min./max. T): 2/1.93

Number of Sectors: 4

Hill Angular Width (deg.): 45

Spiral (deg.):

Pole Diameter (m): 2

Injection Radius (m):

Extraction Radius (m):

Hill Gap (m): 0.03

Valley Gap (m): 0.15

Trim Coils

Number: 7x2

Maximum Current (A-turns):

Harmonic Coils

Number: 2xNsectorsx2

Maximum Current (A-turns):

Main Coils

Number: 1x2

Total Ampere Turns: 3.6x10 5

Maximum Current (A): 1300

Stored Energy (MJ):

Total Iron Weight (tons):

Total Coil Weight (tons):

Power

Main Coils (total KW): 350

Trim Coils (total, maximum, KW): 20

Refrigerator (cryogenic, KW):

(b)RF

Acceleration

Frequency Range (MHz): 12-21.8

Harmonic Modes: 2-4

Number of Dees: 2

Number of Cavities: 2

Dee Angular Width (deg.):42

Voltage

At Injection (peak to ground, KV):

At Extraction (peak to ground, KV):

Peak (peak to ground, KV): 75

Line Power (max, KW): 180-240

Phase Stability (deg.):

Voltage Stability (%): 1

(c)Injection

Ion Source: PIG

Source Bias Voltage (kV):

External Injection:

Buncher Type:

Injection Energy (MeV/n):

Component:

Injection Efficiency (%):

Injector:

(d)Extraction

Elements, Characteristic: Stripping foil efficiency

Typical Efficiency (%):

Best Efficiency (%):

(e)Vacuum

Pumps: oil pumps

Achieved Vacuum (Pa): 2.7e-4

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